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Editorial Notes

ANTIQUITY has readers in every country in the World, from China to Peru, inclusive ; but the present number will be read perhaps for the first time by some who have come to London from distant lands to attend the International Congress of Prehistoric Archaeology ; and it is a suitable occasion therefore for setting down in plain words what ANTIQUITY stands for.

ANTIQUITY is primarily an archaeological journal, though we have always reserved the right to publish articles of a historical nature, if we think fit. We are, however, more closely concerned with prehistoric man and his environment ; within these wide limits we admit of no restrictions of time or space. We stand for the broadest conception of our subject ; we have attempted, often we know with success, to bridge the gulf between the specialist and the reader who is not a specialist in archaeological matters. (It is often forgotten that the specialist in one branch of science is usually a ' general reader ' in all such others as he may be interested in). During the $5\frac{1}{2}$ years of our existence we have published such a wide range of articles that some of them are bound to be of interest to every reader of these words; and if anyone decides, on reading, to become a subscriber here and now, as we hope, it is certain that he or she will not be disappointed so long as ANTIQUITY lasts.

We believe most firmly in the need of studying man not in isolation but in relation to his environment; that, for instance, you cannot understand the life of man in England during the Long Barrow (late Neolithic) period until first you have plotted his remains upon a map and then reconstructed, so far as possible, the vegetation by which he was surrounded. We believe in studying him on the sites where he dwelt, with fork and shovel (the old-fashioned method with pick and spade is now discouraged here); not merely in museums and libraries with note-books. We like also to show our readers what can be seen and discovered by air-photography. Finally, as good disciples of Tylor and Pitt-Rivers and their pioneer colleagues, we try to give life to dead bones by presenting pictures of primitive conditions today in out-of-the-way places. We could quote from back numbers of ANTIQUITY articles which illustrate each one of these principles.

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But we cast our net wide in time as well as in space. In the present number we publish a Chronological Table of Prehistory covering the Old World from the Persian Gulf to the Atlantic and from the Arctic to the Sahara. Much labour has been spent upon it, yet still it is bound to fall short of the ideal. It will be superseded; but it is, we know, a definite advance on anything of the kind yet published. It represents the considered opinion of scholars who command respect throughout the archaeological world. It does not pretend to take the place of the recognized text-books. It is not a text-book, but an indispensable supplement to such. It is intended to enable the reader to visualize the cultures or civilizations there mentioned in organic relationship with those which preceded and followed them. It is a pedigree of early human culture, as complete as can be in the present state of knowledge. Large regions of the world are necessarily omitted, because we still cannot correlate them with others; but that is a defect of knowledge which is already being remedied in India, China and Africa.

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This Chronological Table is an attempt, not the first of course, to visualize as a whole the main currents of human history. The geographical subdivisions adopted are necessarily, and for convenience, national; but, as the Table itself shows, nations are ephemeral phenomena. It is a truism that Science is international; it is one which

is particularly applicable to that branch of Science which is concerned with the origins of humanity. What does it matter to us whether a skull is found in England, France, or China? We are interested in Man, not merely in Englishmen or Chinamen. This universal aspect of Science is generally admitted, even by those who are blind to its political implications. It is, indeed, exemplified by scientific journals (including ANTIQUITY) which are read by students in every land, so far as the barrier of language permits.

The basis of scientific organization is indeed becoming increasingly international. Archaeological books and articles in Scandinavia and the Far East are published in English, or with English summaries and underlines; German and French are used in Central Europe. Here, too, if we may be allowed to prolong the paean of self-praise (for which there is ample journalistic precedent), ANTIQUITY plays its part. Our contributors during the past years have been obtained from many different nations. In the present number we print, in English, a review of a book written in German by a Dutchman, contributed by a reviewer of Austrian birth holding an official position in Ireland. Archaeologically we have no racial or national prejudices; and we try to exclude them rigidly from our pages. We have only one standard —that of intrinsic scientific value.

In recent numbers of ANTIQUITY there have been published several provocative criticisms of contemporary affairs. For some we are personally responsible; all are in our opinion 'fair comment upon matters of public interest' in the archaeological world. They certainly represent the private opinion of more than one qualified critic. But they are not the sort of fare usually served up at scientific meetings nowadays. In the good old days it was otherwise; now however there is a real danger of suffocation by platitudes. In a free-lance journal like ANTIQUITY such matters can be ventilated without malice and with more freedom than elsewhere; and if these occasional draughts of fresh air cause some people to catch cold we sincerely regret their inconvenience, but maintain that the atmosphere is improved, and the majority benefited thereby. Science has nothing to gain from polite humbug which no one really believes.

The International Congress will begin in London on 1 August, and it will last until the 6th. Members will then disperse on excursions to all parts of the country for visits to places of archaeological interest. Membership of the Congress costs one pound and is open to all without restriction. The promoters hope that it will be well supported by all who are interested in prehistoric archaeology and they are anxious to receive applications for membership *now* : these should be sent to the Secretary, International Congress of Prehistoric Archaeology, Society of Antiquaries, Burlington House, Piccadilly, London, W. 1. We cordially support this invitation. The Congress is the first of a new series, and it rests with us in Great Britain to do everything we can to ensure its success.

In connexion with the Congress an exhibition illustrating recent field-work in Britain is being arranged at the London Museum, Lancaster House, St. James's. Included in this will be a display of air-photographs and maps organized by the Director-General of the Ordnance Survey in cooperation with the Keeper of the London Museum. The air-photographs have been enlarged to the maximum size possible and are from negatives made, in the ordinary routine of training, by officers and men of the Royal Air Force, together with some of those published in *Wessex from the Air*. A descriptive catalogue is being prepared for sale at the exhibition. The photographs themselves may be purchased by the public after the exhibition closes ; but all rights of reproduction are reserved by the Crown. There will also be stalls for the display of archaeological books, pamphlets, periodicals and maps.

The maps displayed will show, in a concrete practical way, the great progress that has been made in England during the last decade in the geographical study of archaeology. They will indicate the present state of the great survey of megalithic monuments being carried out, sheet by sheet, by the Archaeological Department of the Ordnance Survey. For the benefit of our foreign guests there will be a selection of typical Ordnance Maps showing archaeological features. It is not generally known that Great Britain is the only country which marks all antiquities upon the published Government maps of all scales. The Congress and Exhibition should not be missed by readers of ANTIQUITY.

A Prehistoric Metropolis: the first Verulamium

by R. E. M. Wheeler

WESTWARD across the valley from St. Albans, the horizon is today fringed by a tract of secluded woodland. A part of this woodland has acquired the name of Prae Wood from a small medieval nunnery, dedicated to St. Mary de Pré, that once stood half-a-mile away beside the derelict Watling Street. The nunnery is now a patch of nettles in the meadows by the Ver, and the Street is a channel from which the metalling has been torn ; but both are better known to the historian and the antiquary than are the banks and ditches which lie hidden beneath the summer-jungle of Prae Wood. For all that, these banks and ditches are relics of a city which was at one time no less than the metropolis of a considerable part of Britain. It is nearly nineteen centuries since they passed into oblivion, and there is something of ironical irrelevance in the words of a Georgian milestone which chance has set up in their midst : ' 1 mile from Gorhambury, 20 miles from Hyde Park Corner '. The shade of Sir Thomas Browne might find a happy perch upon that milestone.

About the year 30 B.C., king Tasciovanus, suzerain (it would seem) of a large region in central and eastern Britain, struck coins which bear upon them, in one form or another, the name of Verulamium and are, incidentally, amongst the first inscribed coins minted in these islands. His predecessor, Cassivelaunus, had been the elected leader of the British tribes against Julius Caesar in 54 B.C.; and it is unnecessary here to discuss again in detail the plausible identification of Verulamium with the unnamed stronghold of Cassivelaunus which Caesar's legions stormed in that year. Suffice it to note that (1) the stronghold of Cassivelaunus, which was the Roman objective, may be presumed to have been identical with the headquarters of his successor, *i.e.*, Verulamium; (2) the position of Verulamium is consistent with the general line of Caesar's advance, and (3) the Prae Wood site, which recent excavation has shown to have been that of a late prehistoric city of considerable magnitude, might be adduced as an exact illustration of Caesar's commentary. His enemy's

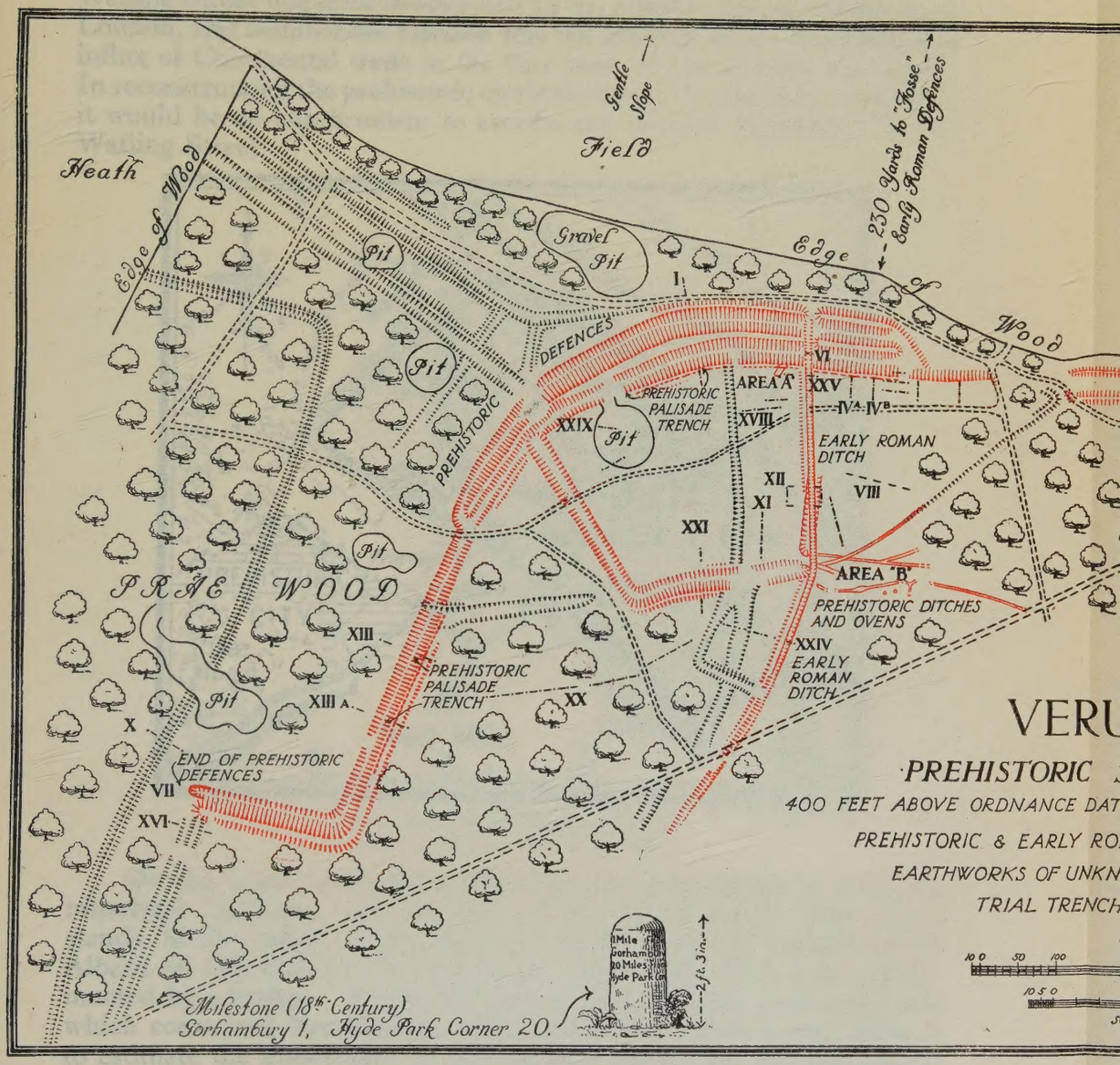
stronghold was, he tells us, 'protected by woods and marshes'; and he adds that 'the Britons apply the name of stronghold to any woodland spot, difficult of access and fortified with a rampart and trench, to which they are in the habit of resorting in order to escape a hostile raid'. Only on the slopes which lie between Prae Wood and the valley, 130 feet below, have the labours of Roman city-builders and post-Roman farmers cleared the woodland which would have completed the illustration.

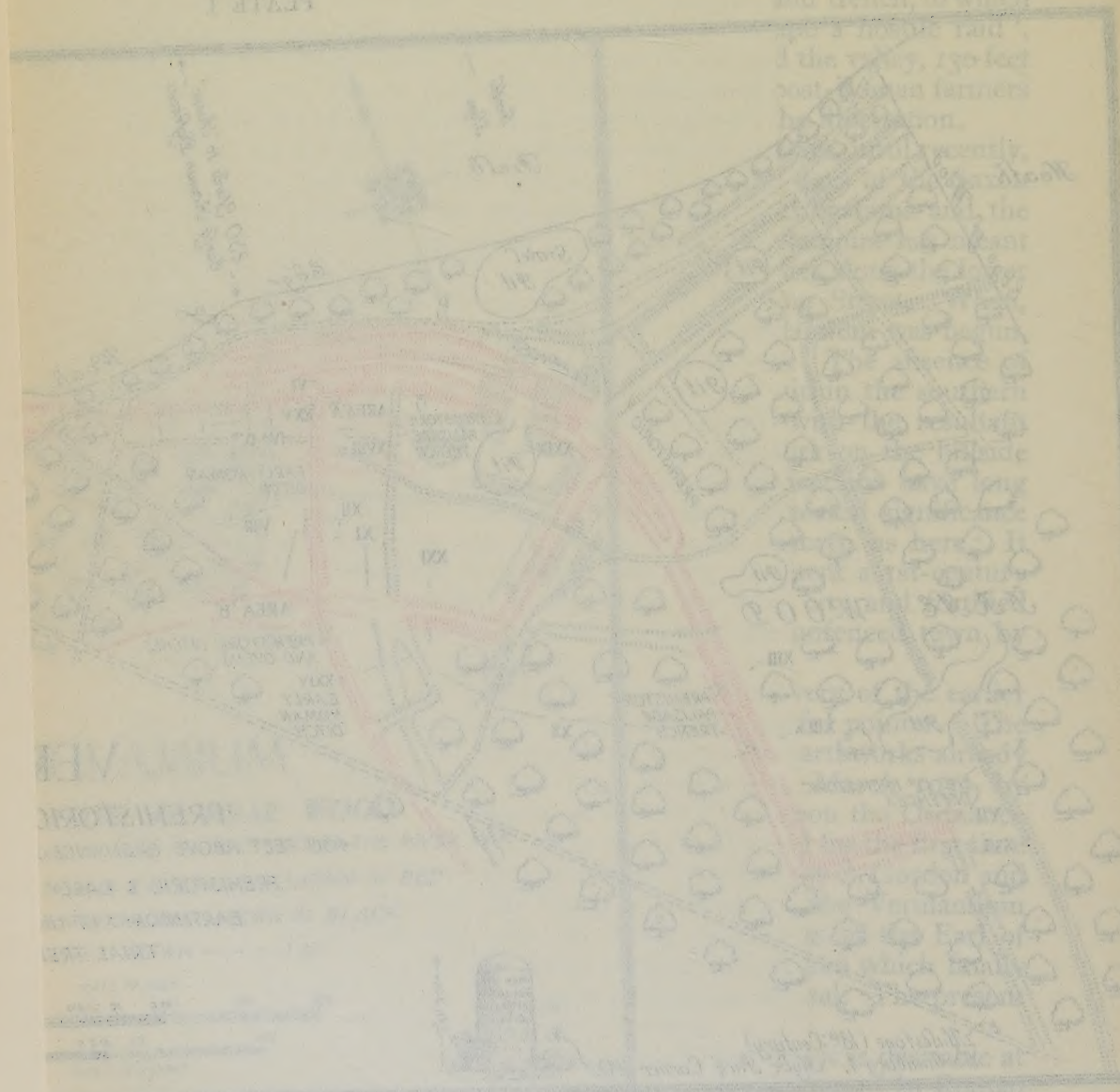
It is the handiwork of these Roman citizens that has, until recently, focussed the attention of the antiquary. From the days of the Saxon abbots, who ransacked the 2nd-century Roman fortifications and the buildings within them for good pagan bricks, Verulamium has meant the great oval enclosure, 200 acres in extent, which lies along the lower slopes of the valley and is threaded by the Watling Street. When, therefore, in 1930 the systematic excavation of Verulamium was begun, it was in this area that the first trenches were cut. The absence of any evidence, in them, of prehistoric occupation within the southern half of the city led the excavators further afield, with the resultant discovery of earlier Roman fortifications of earthwork on the hillside to the west (fig. 1). A part of these earlier fortifications have long been known vaguely as 'The Fosse', but their historical significance had not been suspected, and does not, indeed, concern us here. It need merely be remarked in passing that they represent a 1st-century Roman Verulamium, smaller in size than the later city and fortified presumably as the result of the destruction of the unfenced town by Boudicca and her rebels in the year 61.

In the search for the prehistoric site, the discovery of the earlier Roman city on the upper slopes of the hill was a useful pointer. The next step was clearly to the hill-top itself where the earthworks already referred to, in Prae Wood, had been observed in March 1930 by Mr O. G. S. Crawford. There is no hint of them upon the Ordnance maps and the more important of them are here planned for the first time from a survey (plate 1) prepared mainly by Mr Huntley S. Gordon and Mr D. A. Casey. In 1931 Mr Casey, on behalf of the Verulamium Excavation Committee and with the ready permission of the Earl of Verulam, carried out a fruitful series of excavations here which finally settled the problem of the site of the prehistoric capital. The present summary merely anticipates Mr Casey's report.

In order to appreciate the topography of this site, it is desirable at the outset to bear in mind its *milieu* in the prehistoric era. In Roman as in modern times, a determining factor in the development of the

PLATE I


Heath
Edge of Wood
Gentle Slope
Field
230 Yards to "Fosse" - Early Roman Defences
Edge of Wood
Gravel Pit
Pit
I
DEFENCES
PREHISTORIC
Pit
PRAE WOOD
Pit
XIII
XIII A.
X
Pit
END OF PREHISTORIC DEFENCES
VII
XVI
PREHISTORIC PALISADE TRENCH
XX
XXIX
Pit
PREHISTORIC PALISADE TRENCH
AREA 'A'
XVIII
VI
XXV
IV A. IV B.
EARLY ROMAN DITCH
VIII
XII
XI
XXI
AREA 'B'
PREHISTORIC DITCHES AND OVENS
XXIV
EARLY ROMAN DITCH
VERU
PREHISTORIC
400 FEET ABOVE ORDNANCE DAT
PREHISTORIC & EARLY RO
EARTHWORKS OF UNKN
TRIAL TRENCH
100 50 100
1050
1 Mile to Gorhambury
20 Miles to Hyde Park Cor
2 ft. 3 in.
Milestone (18th Century)
Gorhambury 1, Hyde Park Corner 20.



district was the great arterial Watling Street, running from southeast to northwest along the line of the river-valley. But the dominance of Watling Street was itself determined by the commercial pre-eminence of London, and commercial London was the product of the overwhelming influx of Continental trade in the first years of the Roman occupation. In reconstructing the prehistoric environment of Verulamium, therefore, it would be an anachronism to ascribe any decisive importance to the Watling Street.

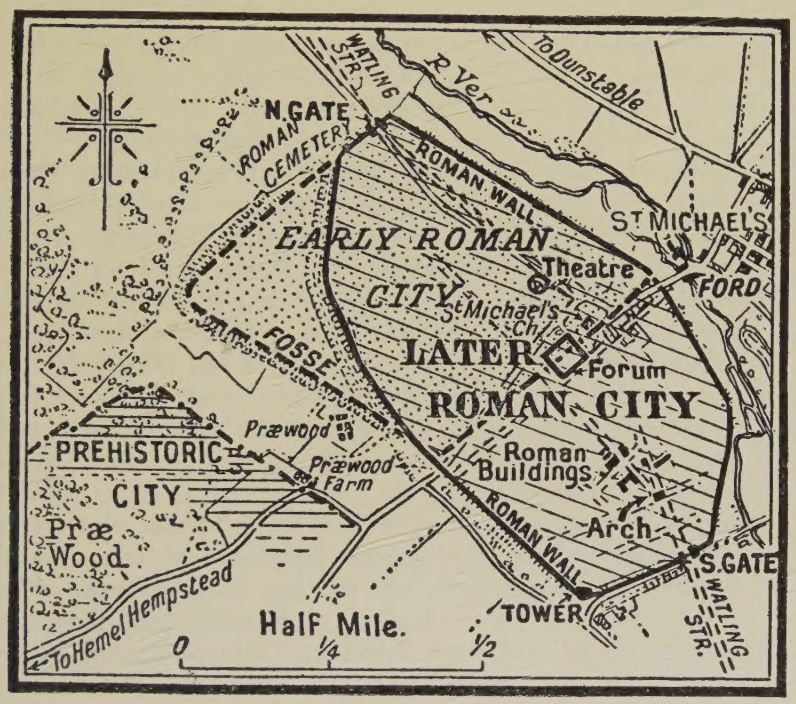


Fig. 1. Sketch-map of the three Verulamiums
(Reproduced by permission from *The Times*)

On the other hand, the prehistoric city commanded at least one important highway. At the foot of the hill whereon Prae Wood stands, in the village of St. Michael's which forms the outskirt of St. Albans on this side, the Ver rivulet is crossed by a ford, now supplemented by a bridge. Across this ford in ancient times passed the road which connected Verulamium and Colchester ; and it is not difficult to estimate the importance of this highway during the last generations of prehistoric Britain when it be recalled that, at the beginning of the

1st century A.D., under the impetus of a rudimentary but expanding Continental trade, the dynastic headquarters were moved by the famous Cymbelene, son of Tasciovanus, from the inland site of Verulamium to the more accessible site at the head of the Colne estuary. Indeed, at this period, the relationship between Verulamium and Colchester must in some sense have anticipated the later relationship between Roman Verulamium and London; and it may be said that, whilst the Roman Verulamium looked southwards to the Thames, its predecessor faced rather towards the east and the Essex coast.

If we now return to the surviving vestiges in Prae Wood, we are prepared, on these general grounds, to find that the main defences of the prehistoric capital line the north-eastward brow of the hill above the St. Michael's ford. The old trackway leading down to the ford may be supposed to have followed approximately the line of the present Bluehouse Hill (the Hemel Hempsted road). On the hill-top, this trackway may have formed the southern limit of the city ; at any rate, all the surviving traces of earthwork lie on its more northerly flank, and continued search both on the ground and from the air has failed to discover any suggestion of bank or ditch to the south of it.

To the modern eye the earthworks of Prae Wood can only be described as a vast maze, consisting of banks and ditches of all sizes and shapes above ground and, as excavation has disclosed, a further series of ditches beneath the surface. They can, however, be roughly divided into two groups : defensive and non-defensive. The former begin today close to the buildings of Prae Wood Farm, but are shown, by an abrupt twist and sinkage of the adjacent stretch of the Hemel Hempsted road, to have continued at one time at least 200 yards further towards the southeast. To the northwest, the defensive banks proceed for nearly 400 yards and then bend slowly and in diminishing strength towards the southwest until, after a sharp outward turn, they disappear abruptly. At this point, the actual end of the ditch was uncovered during the excavations, thus showing that the earthwork in fact ceased here. Why it should have done so is not apparent, since the ground hereabouts is level and the subsoil is for some distance, both within and beyond the limit of the earthwork, a coarse gravel which implies no sudden phytographical change of the kind that frequently explains the disposition of primitive barriers. It may be supposed that the mixed but often dense woodland, which the variable subsoil of the site as a whole (ranging from a sandy clay to gravel) supported, made the construction of elaborate artificial defences less

urgent on the south-western side, particularly since this part of the settlement lay furthest from the line of approach to the ford and, as excavation has indicated, did not contain the main areas of occupation. It may be observed, in this connexion, that the more westerly portion of the defences includes only a single ditch and is notably weaker than the multiple system which faces northwards and north-eastwards towards the valley. However irrational from a military standpoint, it would almost seem that the strength of the defences was proportionate to the intensity of the occupation immediately adjoining them : an inference which might suggest that they were thrown up at a time of crisis rather than as a part of the considered lay-out of a fenced town. It is tempting (but, of course, improper) to toy with the conjecture that these seemingly-incomplete defences were built hastily by the tribesmen of Cassivelaunus when Caesar's legions were already groping their way northwards across the Thames.

It may be that, towards the southwest, the woodland barrier was supplemented by a palisade. Certain it is that the earthwork defences were completed on their inner side by this device. At numerous points, the trench in which the stockade had stood was revealed along the lip of the ditch (plate III) or, where the system is multiple, of the inner ditch. Behind the palisade had been heaped a certain amount of earth from the ditch, but the palisade-bank seems never to have been of any considerable height. Palisades of this type were probably a common feature of the defences of our later prehistoric towns—for example, similar traces of them have been found at Hembury Fort in Devonshire, and at Cissbury in Sussex. The Verulamium palisade was built into an earlier ' occupation-layer ' which included small fragments of pottery similar in fabric to the coarser wares found elsewhere on the site but for the most part of indeterminate form. At one point, the palisade-trench had been cut through and the palisade-bank had been built over a cobbled area, some 20 feet long and 9 feet broad (plate IV).

Where the surviving defences are strongest, *i.e.*, at the northern bend (plate II), they consist of the palisade and bank, an inner ditch, a median bank, an outer ditch, and a third bank with a final escarpment, and are 80 feet across from palisade to outermost bank. The median and outermost banks contained stray scraps of pottery similar to those noted above.

Within the area covered by the defences, numerous trial-trenches cut in the south-western quarter of the site yielded hardly any traces

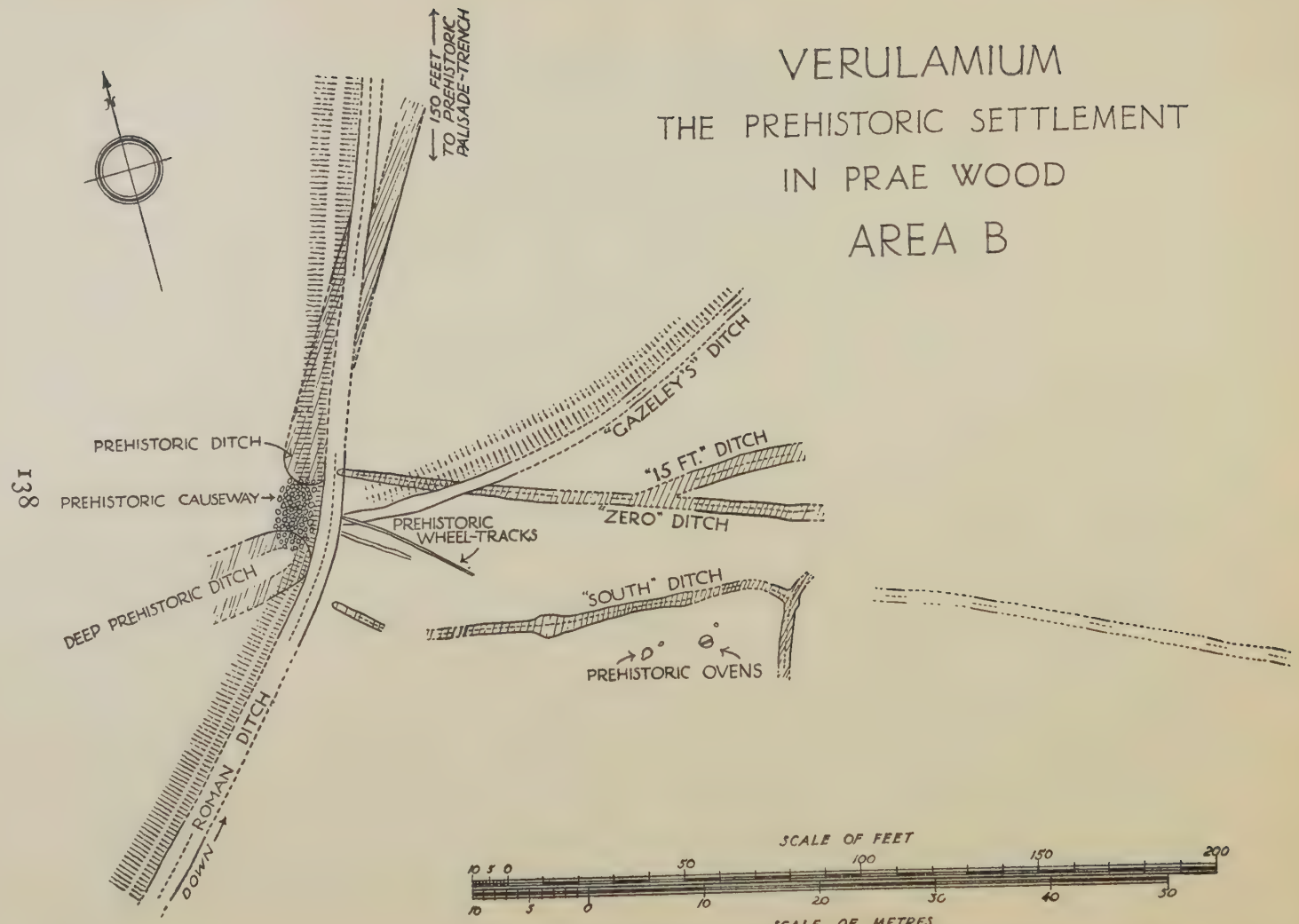

VERULAMIUM
THE PREHISTORIC SETTLEMENT
IN PRAE WOOD
AREA B
150 FEET TO PREHISTORIC PALISADE-TRENCH
PREHISTORIC DITCH
PREHISTORIC CAUSEWAY
DEEP PREHISTORIC DITCH
ROMAN DITCH
DOWN
"GAZELEY'S" DITCH
"15 FT." DITCH
"ZERO" DITCH
PREHISTORIC WHEEL-TRACKS
"SOUTH" DITCH
PREHISTORIC OVENS
SCALE OF FEET
10 5 0 50 100 150 200
10 5 0 10 20 30 40 50
SCALE OF METRES

FIG. 2.

of occupation. Where the defences are strongest, however, they shelter an enclosure of about 1¾ acres bounded by rectilinear lengths of ditch (see plan, plate I) some 7–12 feet wide and 4–8 feet deep, the upcast of which was, in part, thrown up on the outer side. These ditches had been filled up with debris (plate VI), including much ash and great quantities of pottery covering the period from the end of the 1st century B.C. to about A.D. 40. The filling was generally sealed by a layer containing fragments of Roman brick and Roman provincial pottery of the 1st century A.D., whilst the filling of the eastern ditch had been cut by a part of a subsequent drainage-trench also of the early Roman period (see fig. 2).

At the south-eastern corner of the enclosure, the prehistoric ditches stopped on each side of a causeway 14 feet broad, paved with a heavy layer of large flints. That this flint cobbling was an original feature of the work, was shown by the fact that the flints seeped down into the ends of the adjacent ditches and were there covered by the earliest prehistoric silting. Approaching this causeway from the south-east, two long ruts (see fig. 2 and plate V) were found beneath the surface, in the natural sandy clay of the site. Where best preserved they were parallel, 8 inches deep and 4 feet 7 inches to 4 feet 9 inches apart, centre to centre ; and a few feet before the margin of the flint causeway was reached, at a point where the surface slightly dipped, the soil between them had, in ancient times, been churned up and softened, and had thereby attracted a forest of bracken roots. As they approached the causeway, the ruts had been cut by the early Roman drainage-ditch already mentioned, and were therefore prior to it. These ruts can claim the distinction of being the oldest wheel-tracks yet found in Britain, and may perhaps provide fresh evidence for the antiquity of the modern standard gauge of 4 feet 8½ inches.

A clearance of the area in the vicinity of the wheel-tracks revealed an erratic system of relatively shallow ditches (see fig. 2), doubtless intended to drain the adjacent soil for habitation. The ditches were not all of identical date, but most of them had been used secondarily as rubbish-tips (plate VI) and contained pottery of the same late prehistoric phase. With the pottery were animal-bones and ash which had been tipped or swept into them, mostly from the southern side. A careful search failed to reveal any certain traces of hutments, but the remains of two ovens (plate VII), with slight traces of perhaps two more, were found near one of the ditches. These ovens had been oval on plan, with clay walls which had probably at one time been carried up

to form a domed top. At one end of each oven, an extension of the burnt flooring indicated the position of the hob. Similar ovens have been uncovered on the foreshore of the Thames at Tilbury in Romano–British huts of native type, and were used probably for cooking food.

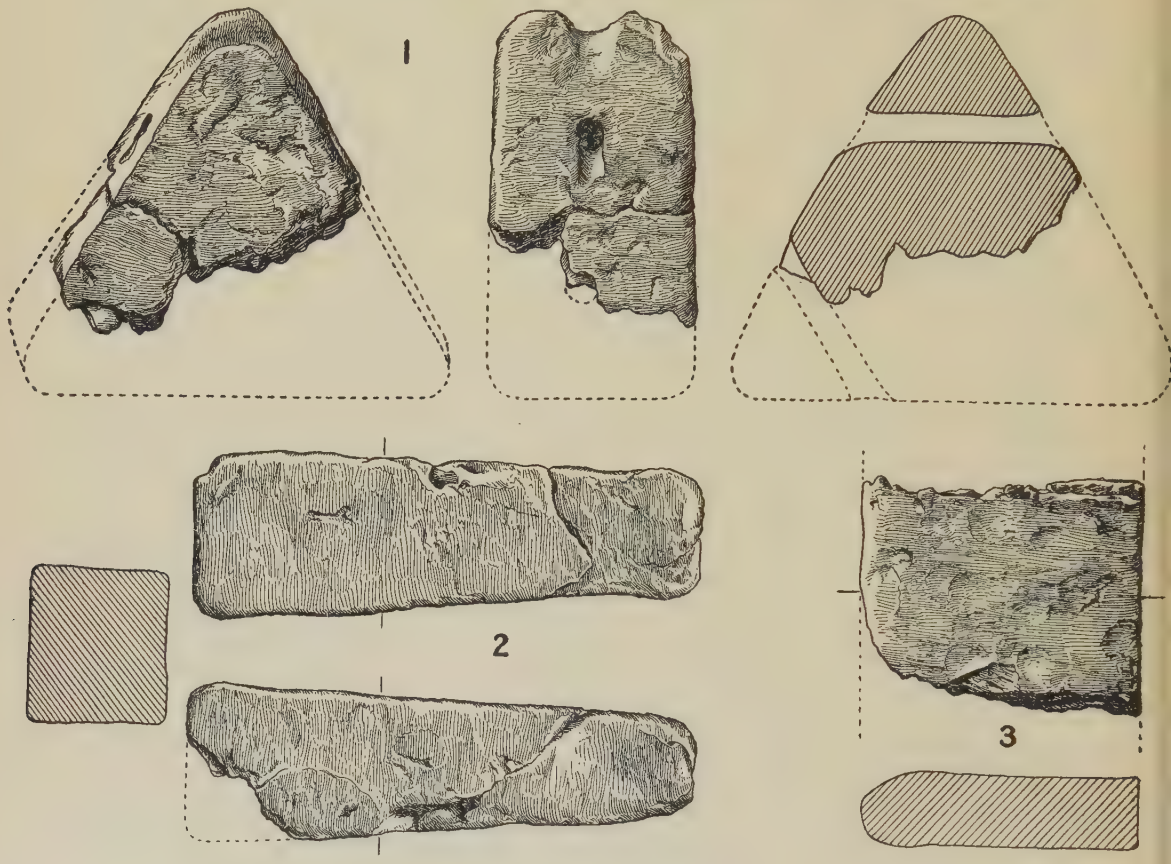


Fig. 3. 1, Clay loom-weight; 2, Clay fire-bar or pillar-support; 3, Brick $\frac{1}{3}$

The Verulamium ovens had been floored with clay reinforced by potsherds, and contained fragments of pierced bricks which had presumably been raised on fire-bars to form a grid (see fig. 3, no. 2, and plate VIIIb).

Until further excavations have revealed remains of the actual dwellings of the prehistoric inhabitants, our knowledge of their environment remains inadequate. But a hint of interesting possibilities is

given by the presence of considerable quantities of fragmentary brick among the debris in the drainage-trenches. These bricks (plate VIIIa and fig. 3, no. 3) are readily distinguished from those of Roman Britain. They are yellow or yellowish-red in colour and the clay is coarse and contains large quantities of pebbles and grit. Their thickness varies from 1 to $1\frac{3}{4}$ inches. Their surface is roughly kneeded into shape with

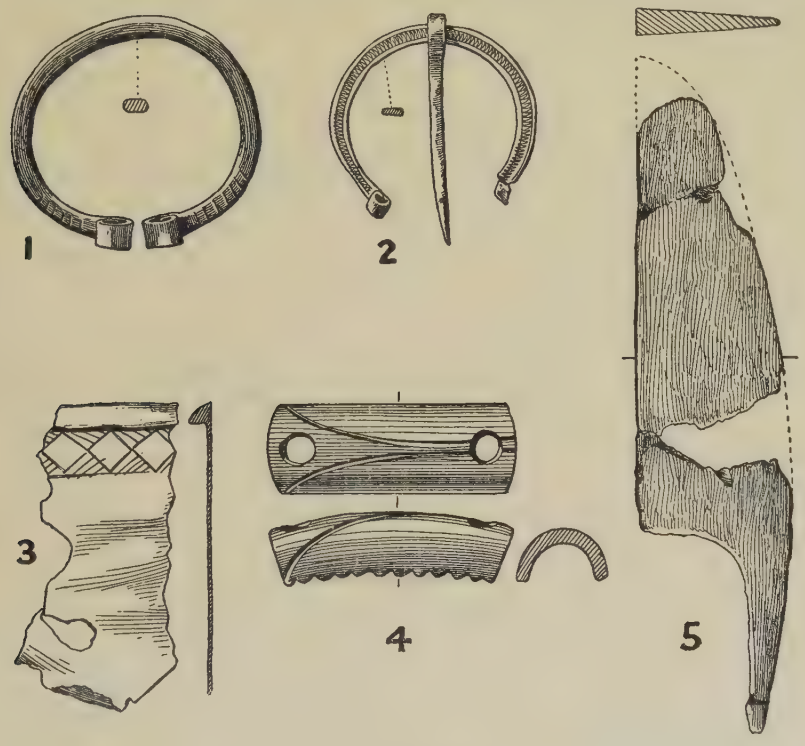


FIG. 4. Objects of metal $\frac{1}{2}$

the fingers, and at the edges they are normally rounded. No complete brick was found, but one had been $4\frac{1}{4}$ inches wide whilst others had been over 6 inches wide. No relic of a brick structure has yet been found, and there is no indication that lime-mortar was used. Brick structures were, however, built in some of the Gaulish *oppida* before the Roman conquest, and it may be that the Verulamium *oppidum* also contained houses built of these primitive bricks.

The general culture of the inhabitants showed something of that

curious mixture of squalor and sophistication which we are accustomed to find in Early Iron Age Britain. Their crude bricks may be taken as a symptom of unusual enlightenment. The triangular loom-weights (fig. 3, no. 1) and clay spindle-whorls are evidence of a normal prehistoric home-industry of a kind to which similar loom-weights in the contemporary Glastonbury lake-village and elsewhere bear witness. Of metal-working, few traces have yet been found, but a broad-bladed knife (fig. 4) and a fragment of another are of common Iron Age form. No coins and few ornaments have so far come to light. Two bronze penannular brooches have their ends rolled forward, instead of laterally as at Glastonbury, and one of them is decorated with a roughly incised zig-zag pattern. A fragment of sheet bronze (possibly part of a sword-scabbard) is ornamented with incised lozenges. Again, the workmanship is of the rudest description (see fig. 4).

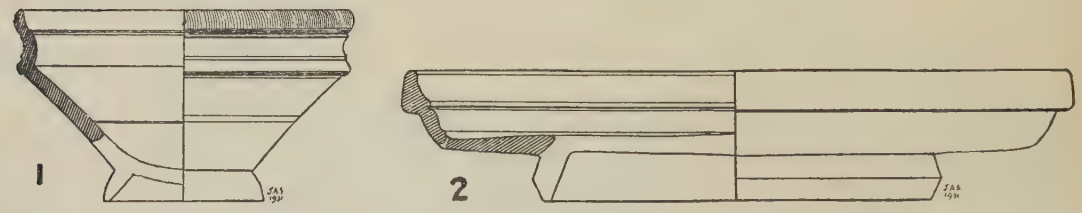


Fig. 5. Red-glazed (Arretine) ware, imported from Italy before the Roman conquest ½

Of greater interest is the pottery, of which large quantities have been found. This may be divided into three categories : (1) imported vessels of Roman (mostly Italic) manufacture ; (2) imported vessels of northeast Gaulish or Belgic manufacture ; (3) coarse imitations of (1) and (2), together with other vessels of coarse fabric, most of which may probably be ascribed to local kilns.

A full description and discussion of these categories must await the preparation of the detailed report but samples of each category are here illustrated, with a brief commentary.

Category 1. Only two or three vessels of the red-glazed Italic or Arretine ware are represented. Two of them, which may have been made at any time between 20 B.C. and A.D. 40 are illustrated (fig. 5). Parts of a jug and a small amphora, both of classical type and dating from the first half of the 1st century A.D., were also found.

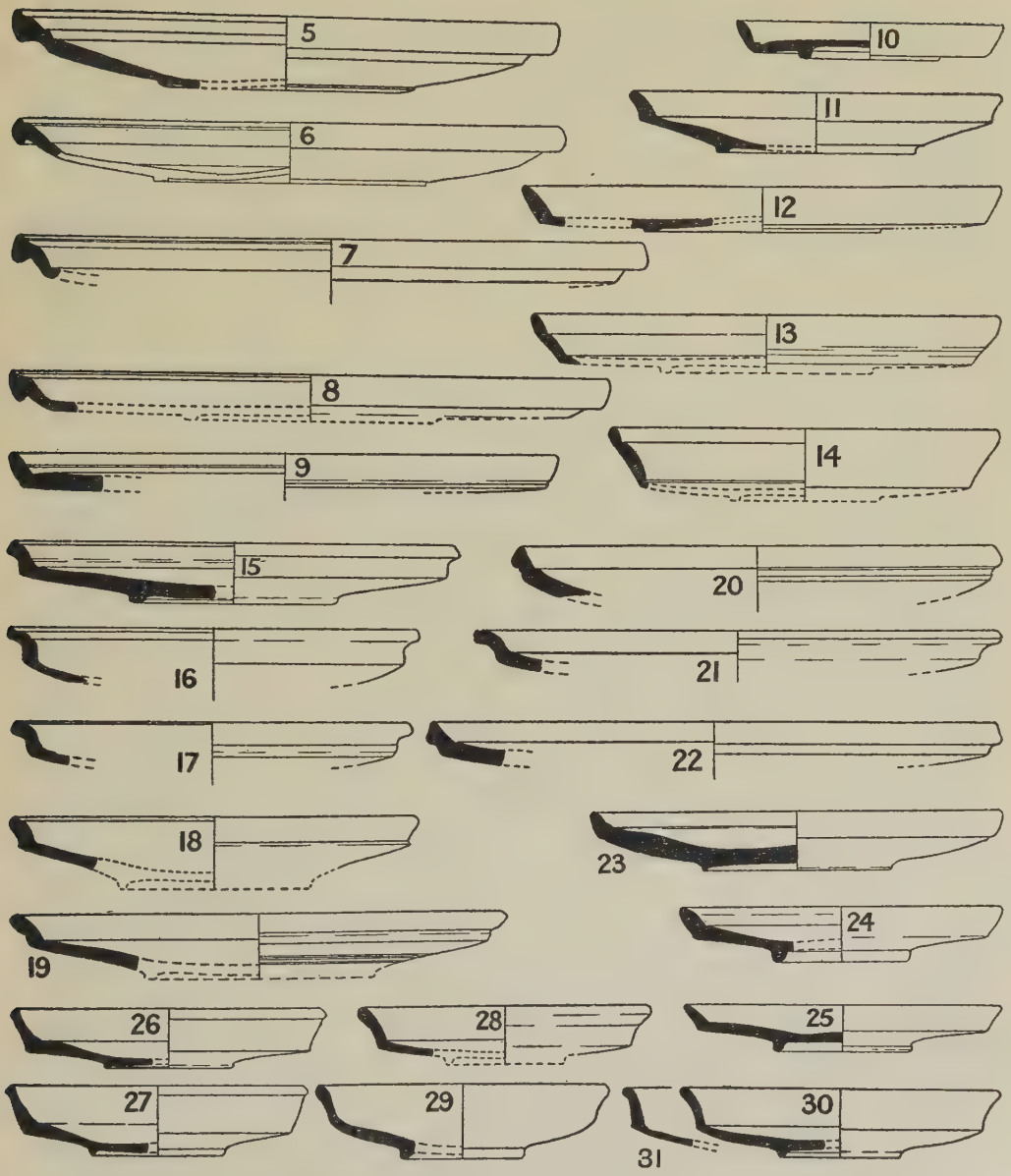


FIG. 6. Belgic (5–14) and sub-Belgic (15–31) plates copied directly or indirectly from Italian prototypes $\frac{1}{4}$

Category 2. Fragments of about 20 plates, of the hard, wheel-turned grey ware which the Belgic potters of the first half of the 1st century A.D. made in imitation of Arretine forms, were found and are sufficiently represented in fig. 6. These are not easy to date more precisely. One characteristically late feature of the Belgic type of plate, however, has not been recognized on this site: namely, the tendency of the foot-rings of the later examples to lose their function, and for the plate to rest instead upon its outer circumference. The functionless foot-ring does not appear on the Continent at Haltern (11 B.C. to A.D. 16) but is found at Claudian Hofheim (about A.D. 40 to 51). The absence of this late feature is one of many evidences that the filling of the Verulamium ditches was completed before the Claudian invasion of A.D. 43.

The following stamps of Belgic potters are represented :—TIOTAG (cf. *C.I.L.* XIII, pt. 3, fasc. 1, p. 376, 1911); OTAV, or VATO retrograde, on fig. 6, no. 10; NONICO (cf. *C.I.L.* ib. p. 306, 1441); . . . AN, possibly BELAN, a stamp which occurs at Haltern; and IVF, perhaps an 'imitation' stamp, on sub-Belgic rather than true Belgic ware.

Category 3. Under this category are grouped the coarser wares, which may also in some cases be importations, although most of them are probably of more or less local origin. A majority of them are made on the wheel, but with very varying degrees of skill. They range from angular cordoned cups of excellent grey or orange-coloured clay (fig. 7, nos. 32–38), recalling, in form, the *tazzas* of well-known Belgic type, but generally with a simple base-ring rather than a pedestal; to large, roughly-scored vessels with heavy roll-rim (fig. 8, no. 46) of a type which, in this district, lasted occasionally into the 2nd century A.D. Plates which may be regarded as 'sub-Belgic', *i.e.* as local imitations of the Belgic series, are numerous (fig. 6, nos. 15–31), and occasional rough copies of other Italic or Arretine forms are also present (fig. 7, no. 45). The pedestal-foot which is usually regarded as typical of Belgic pottery occurs rarely (fig. 7, no. 32), only four examples all told. Butt-beakers, which are frequent on northeast Gaulish sites in the 1st centuries B.C.–A.D., are fairly numerous here also (fig. 7, nos. 43, 44). They are usually of orange-coloured ware, but occasionally of a hard white fabric which may be of Continental derivation.

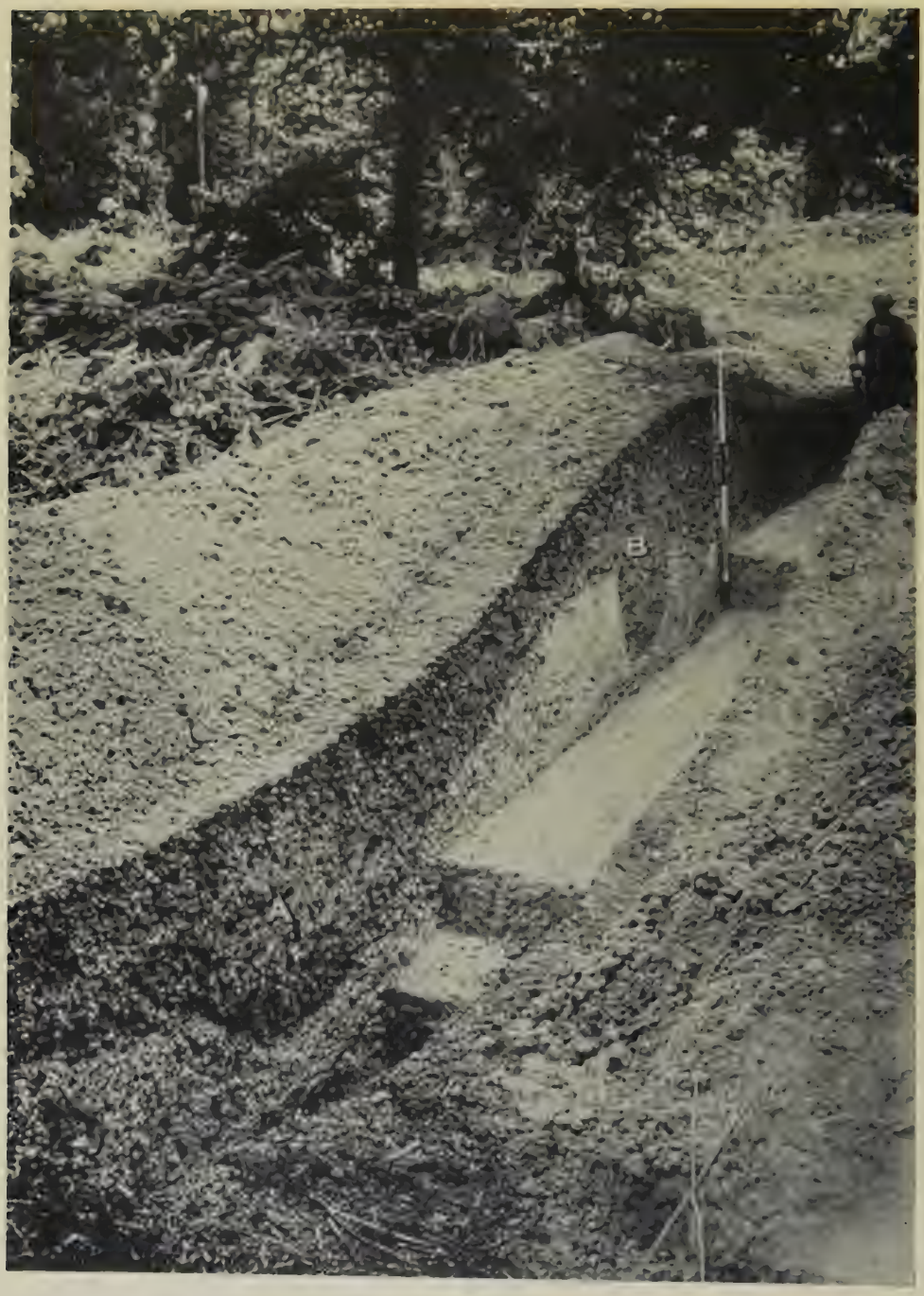
If we summarize the evidence of the pottery, we may say that it has few links with pre-Belgic pottery in this country, and that, for the most part, it is, or is modelled upon, the La Tène III pottery of north-eastern France and the Rhineland, as supplemented and modified by

PLATE II

PREHISTORIC TERRACES. INNER DEFENSIVE DITCH AT NORTHERN HEAD, DURING EXCAVATION

facing p. 144

PLATE III



DEFENSIVE DITCH (A) AND BANK WITH SLOT FOR PALISADE (B) ON THE NORTHWEST SIDE OF THE SITE (XIII ON PLAN)

PLATE IV

COBBLE FLOORING PRIOR TO DEFENCES, AT 'AREA A' ON PLAN. THE STRAIGHT EDGE OF THE FLOORING NEAR THE RANGING-POLE MARKS THE LINE OF THE PALISADE.

PLATE V

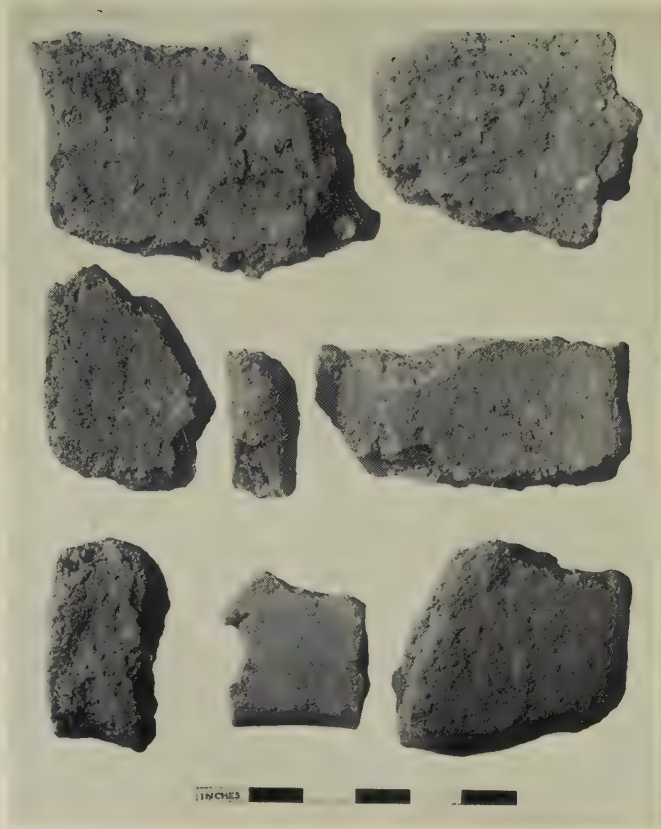
PREHISTORIC WHEEL-TRACKS, INTERRUPTED IN FOREGROUND BY EARLY ROMAN DITCH

PLATE VI

PREHISTORIC DITCH AT XII ON PLAN, SHOWING LAYERS OF DEBRIS-FILLING

PLATE VII

A CORNER OF PREHISTORIC OVEN



A. FRAGMENTS OF PREHISTORIC BRICK

B. PREHISTORIC PIERCED BRICKS

POTTERY FROM PREHISTORIC VERULAMIUM
(scale of inches)

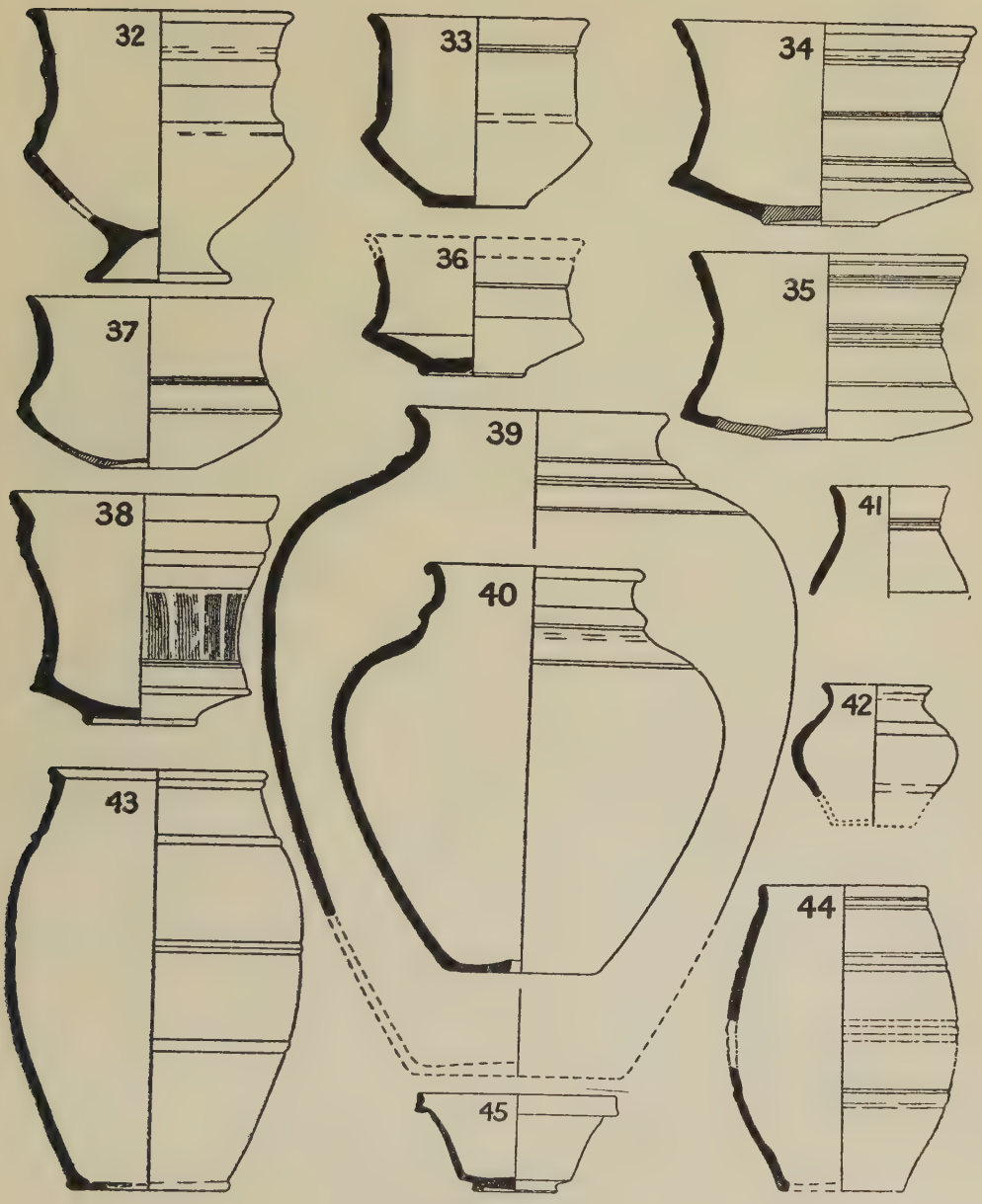


FIG. 7. Pottery: coarse ware $\frac{1}{4}$

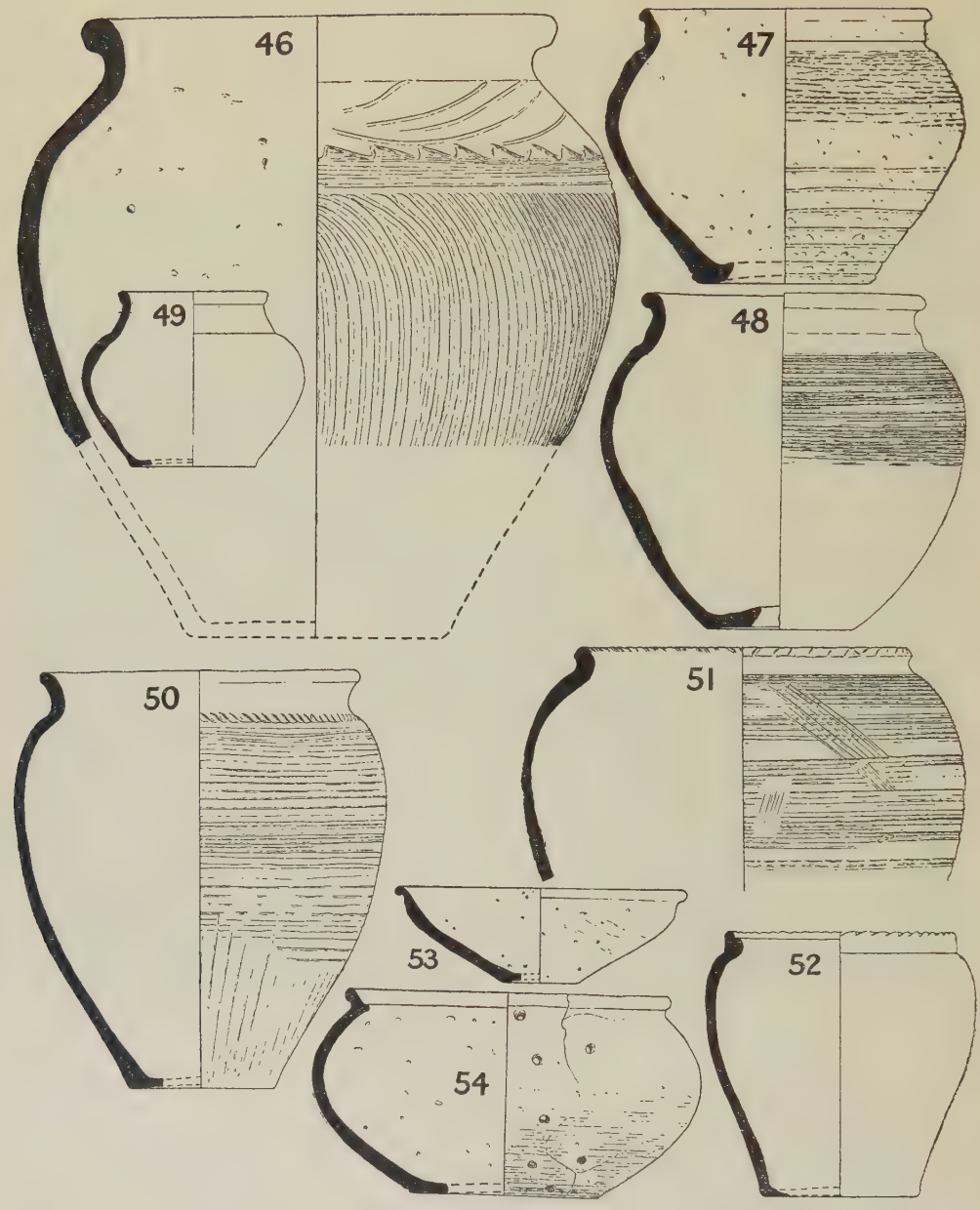


Fig. 8. Pottery: coarse ware ¼

influences from Italy. This concurrence of Continental traditions at prehistoric Verulamium offers a further illustration of Caesar's statement that the dominant factor in the population of southeastern Britain consisted of settlers from Belgium. It may further be deduced from the character of the associated Belgic and Italic wares that the intensive occupation of the area excavated dates from about 10 B.C. to A.D. 40. It should be emphasized, however, that the area so far explored is relatively small and that, in particular, the areas adjoining the approach to the ford, where we should expect the earliest and most intensive occupation, have not yet been touched. The explorers—to adapt Tacitus—have shown prehistoric Verulamium to the world rather than excavated it. But they have not yet laid down the spade; and it is perhaps relevant to add that the secretary of the Verulamium Excavation Committee (which is appealing urgently for funds) is Mr C. E. Jones, Warners, Russell Avenue, St. Albans, and that its chairman is Sir Charles Peers, President of the Society of Antiquaries.

Balloon Photography and Archaeological Excavation

by P. L. O. Guy

Field Director of the Megiddo Expedition of the Oriental Institute of the University of Chicago

IT is a great help to the understanding of a piece of country, a town or a building to get to some high point in the vicinity and look down upon it, and the more nearly vertical one's point of view the more accurate is one's impression. In the 'nineties, as a boy, I used to spend hours at the top of the spire of Rouen Cathedral gazing down upon the city below, and it was only a step from this to record such a view photographically ; but it was some time before I took my first truly vertical photograph.

About 1904, a friend who was engineer on the construction of the Rothesay Dock near Glasgow asked me to photograph for him the concrete foundations of a part of this dock : I could not get a proper view of these from anywhere on the ground, so I asked if I might utilize a great crane which stood nearby. It was probably against all the rules of the Clyde Trust, but I was thereupon swung high in the air over my subject, and plate 1 shows the result obtained with a no. 2 Bullseye Kodak.

During the war air-photographs became a commonplace, and it was my lot to use them a good deal, particularly in connexion with the indirect firing of machine-guns. Later on, in 1922 and 1923, when I was in the Palestine Department of Antiquities, friendly relations with the R.A.F. enabled me to examine a number of ancient sites from the air, discovering such things as the complex of buildings buried by sand-dunes inside the enceinte of the Crusaders' castle of Athlit. The air-photos obtained at that time formed the beginnings of the Department's collection, but they were chiefly what may be termed reconnaissance photos, showing the extent and character of ruins still covered by surface soil.

The excavation of Megiddo presented the opportunity of realizing an old desire—the use of air-photography as an aid to recording ruins

progressively exposed, and as a help in the often puzzling task of distinguishing excavated buildings of one stratum from those of another.

The use of aeroplanes or full-size balloons was ruled out for reasons of expense, and I cast about for other means.

Kites offered one solution of the problem, and I have to thank Major B. F. S. Baden-Powell, whose successful work with these during the South African war will be remembered, for giving me information about them. I came to the conclusion, however, that for our particular conditions and requirements a small captive balloon would be more suitable, and by renewing an old acquaintance with the Royal Aeronautical Society I succeeded in getting into touch with Mr Griffith Brewer, of whose early work I had heard. Mr Brewer replied enthusiastically to my enquiries, was good enough to show me several admirable photographs he had obtained, I believe in 1902 or 1903, by means of a camera suspended from a small balloon of gold-beaters' skin, and even offered to rout out his old apparatus for me to look at. My stay in London was too short to permit me to avail myself of this offer but Mr Brewer's verbal explanations were clear, and the apparatus itself simple. The success of the photographs since taken at Megiddo owes much to him.

On my return to Palestine it happened that one of my assistants, R. S. Lamon, was going to America, so I commissioned him to have made an electrical release, controllable from the ground, which would trip the camera-shutter. The apparatus which he procured (it was made by the Physics Department of the University of Chicago) is a beautiful little piece of mechanism : it is light and simple, and it works.

I had also asked Lamon to see if he could not find a small ready-made balloon in America, in order to save the expense of having one built specially, and he bought one of the expandable rubber kind that is used for meteorological purposes. This had the merit of being light and cheap but, as will appear, it turned out to be unsuitable.

Meanwhile O. E. Lind and E. L. De Loach had manufactured a light, fixed-focus camera of three-ply wood to take one of our lenses and a 5 by 7 inch film-holder, and when Lamon returned from America we tried the whole combination, as well as the wooden winding reels made locally to carry the light steel wire (uncovered) which we used both for holding the balloon and for passing the current to the shutter-release.

We inflated the balloon with hydrogen which I had procured in

cylinders from France : this is an expensive item, not because the gas itself is dear but because of the price of the cylinders and the shipping charges on these.[1] I can see no way of avoiding this, for all the machines for generating hydrogen on the spot, about which I have enquired, are either too large or too small.

On our first attempt we controlled the balloon by wires from two points : it went up excellently and we got two photos, one good[2] and one poor. Then came disaster. We had got the balloon back into my garage, which we were using as its shelter, and were pegging it down by means of a light fishing net thrown over it. Now whether it was that the balloon, whose skin had certainly become somewhat electrified, generated a spark through friction with the net, or that there was a flaw in the rubber, I know not ; but there was a loudish pop and the balloon, as such, ceased to exist. Perhaps it was merely because it happened to be the fifth of November—an appropriate date for more reasons than one.

We were, however, not at all discouraged, for our experiment had in the main been successful. We had proved that we could take a good photo, and we had learned a good deal one way and another. The main things were that expandable rubber was evidently not the right material for the balloon, that thin steel wire was not good for control because it could kink easily (we later found that it also got quickly rusty), and that our rather primitive winding-reels were not good enough. Our mistake had, in short, been to spoil our ship for a ha'po'rth of tar, and I would warn other experimenters against this.

I hesitated to use gold-beaters' skin for our new balloon because I feared that it would quickly perish in the heat of Palestine, so I decided to have a rather larger balloon made of the heavier but thoroughly solid rubberized silk, and on 25 November 1929 I cabled my requirements to the firm whose name Mr Brewer had given me. They carried out the order with a speed and accuracy that are truly praiseworthy,

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[1] While the balloon itself was admitted into Palestine free of duty, under the regulations governing the facilities granted by the Palestine Government to Archaeological Expeditions, I have been officially informed that 'Exemptions accorded to Archaeological Societies are not held to cover the importation of Hydrogen'. The cost is thus increased considerably, for we have been obliged to pay duty at 12% not only on the gas itself but on the cylinders, and also on the freight and insurance of each consignment.

[2] Published as fig. 10 in Oriental Institute Communication no. 9. (*Chicago : University of Chicago Press*, 1931. $1).

for the finished balloon arrived at Gaza aerodrome on 13 December, having been despatched by Imperial Airways on the 7th. It is true that the Palestine Customs held up delivery for four days, apparently expecting that I would travel 120 miles to Gaza in order to clear it there, but even though I did not do this I received it only twenty-two days after placing the order, and it has turned out to be satisfactory in every way.

Meantime Lamon had designed a better type of winding-drum, with a simple, squeeze-on friction-brake, and we had three made in Haifa. We replaced the original mooring wires by strong cords capable of holding about 80 pounds each, and also prepared a third attachment of insulated copper wire (double). This last was intended solely to carry the current for the shutter-release and to act as a height-gauge, but not to take much strain. Since the new balloon had more lift than the old one, and could carry about 12 pounds, Lind made a new camera (also of three-ply wood) to take an 8 by 10 inch film-holder.

Our whole apparatus, with its cost, is as follows :—

Balloon[3] of rubberized silk, 12 feet in diameter, 900 cubic feet capacity, made by the R.F.D. Company, 17 Stoke-road, Guildford, Surrey		£50
Camera of 3-ply wood completed with oddments, estimated cost if purchased (without lens)		£15
Electric shutter-release		$50
Battery for operating this, composed of ordinary torch batteries, with switch and connexions[4]	about	£1
150 metres insulated copper wire (double)	about	£2
300 metres stout cord (not just string)		
3 winding reels		£5
6 Hydrogen cylinders, holding 7 to 8 cubic metres each	francs	2700
Manometer for checking contents of cylinders and controlling rate of inflation of balloon	francs	175
Hooks and oddments	under	£1
Shed of wood framing and asbestos sheeting[5]	about	£70

We use a pretty fast film (Eastman Portrait super-speed) in order to get as short an exposure as possible ; this avoids muzziness if the camera happens to move a little at the critical moment.

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[3] This balloon is spherical. Mr Brewer has since suggested that a 'sausage' would work just as well, and would require a much smaller shed. I agree.

[4] Lamon is trying to get hold of a magneto to replace this : it would never run down, and would enable us to release the shutter merely by turning a handle. About 15 volts would suffice.

[5] This *must* be sparrow-proof and mouse-proof.

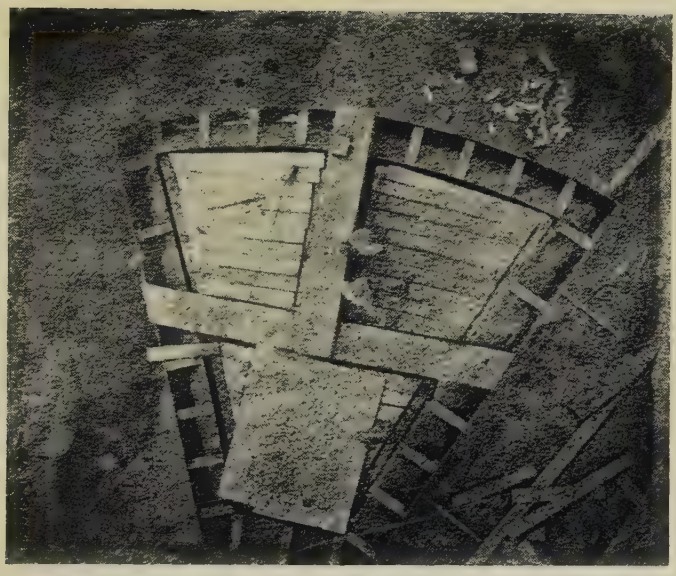
The balloon as supplied had a wide filling-tube below, and this had an open mouth which could be loosely closed by a cord. We found that, in going up and down, gas was lost, or air admitted, or both, and that the lift decreased, so we sealed it up tight with tire-repairing material, and fitted a motor-tire valve (without the inside) for inflating, and for letting out a little gas on expansion. This valve is kept closed by the ordinary type of cap.

The rigging is simple. There are 3 equidistant leading lines for walking the balloon about, and 4 lines which originally led down to a wooden hoop about 30 cms. in diameter. We found it better to replace this by a stout metal snap-hook. The camera is suspended by two spliced cords and one double electric wire, all about 50 cms. long, from a metal ring some 5 cms. in diameter : this three-point suspension facilitates adjustment for level—it is desirable that the film-holder should be absolutely horizontal. The ring is attached to the balloon snap-hook, and to the ring are attached snap-hooks at the ends of the two mooring lines. The electric wire is also attached to the ring by a snap-hook, but is insulated from it : this arrangement relieves the electric connexions with the camera of all weight and strain. For the connexions small ' wireless ' plugs are used, different colours distinguishing positive from negative. (Plate II).

We go to work in this manner. Choosing a still morning—the air *must* be still—we inflate the balloon slowly through the manometer to about the degree shown in plate III which allows for normal expansion, and we close the valve. All the apparatus is then taken to the middle of the area to be photographed ; the camera, mooring lines and electric wire are all attached ; the slide is drawn and the slit for it is blocked by a piece of cardboard cut to fit exactly so as to exclude light ; the shutter and shutter release are set, a scrap of paper is jammed behind the shutter-trigger and the plugs for the connexions are inserted. When each of these details has been checked the balloon is allowed to rise slowly and without jerks, special care being taken to prevent these at the start.

The battery-man and I remain at the middle of the area to be photographed, and the men at the mooring lines carry their reels outwards, and let out or take in line according to a simple code of hand-signals given by me. They should wear hedgers' gloves, or at least have a piece of sacking, for handling the line. The battery-man manoeuvres his reel so as to relieve the electric wire of strain. This wire is marked at 50-metre intervals, and when 100 metres are out,

PLATE I



OVERHEAD PHOTOGRAPH OF FOUNDATIONS, ROTHESAY DOCK

facing p. 152

CAMERA AND WINDING REELS

The electric shutter-release can be seen to the right of the lens. The left-hand reel carries the electric wire, and the battery box is beside it. The friction-brake can best be seen at the top of the centre reel; by squeezing the bell-crank against the carrying-bar a block of fibre is pressed against the right-hand side of the drum. Scale, 1 metre long.

Copyright by the Oriental Institute of the University of Chicago

PLATE III

BALLOON READY FOR USE, WITH CAMERA ATTACHED. THE OLD TYPE OF REEL IS SHOWN.

Copyright by the Oriental Institute of the University of Chicago

EXTENSIBLE LADDER USED AT MEGIDDO FOR OBSERVATION AND PHOTOGRAPHY

Height 9.7 metres

Copyright by the Oriental Institute of the University of Chicago

and the balloon is over my head, I tell the battery-man to make contact. If, on doing this, the scrap of paper does not fall from behind the shutter-trigger, he moves his wires along so as to take current from more cells in his battery until the paper does fall. This, of course, indicates that the exposure has been made, and we then wind in, change the film and pass on to the next area to be photographed.

It is better to work as quickly as may be without hurrying, and to get as many photos as possible in the same morning, for the weather may change and the balloon does lose lift in time. Up to a point it may be topped up by the admission of more hydrogen, but after a while the effects of osmosis become pronounced and then it must be completely deflated and refilled. This indicates that if one has very much photography to do one must have a reserve of full gas cylinders. Cylinders, by the way, need checking by manometer to see that they are really full—we once received a consignment which had evidently been tampered with *en route*, and it took the contents of all six to fill the balloon to the degree normally reached by three. As a general rule we find that in a single morning we can take as many photos as the progress of excavation requires.

In order to be able to make exposures in quick succession the ground must naturally be prepared beforehand—any weeds that have grown up in odd corners must be removed, and the whole area must be properly cleaned up and examined before the balloon is inflated. The area one's particular lens will cover at the height it is decided to use must be known, and the points to be the centres of the different photos, at which one will take one's stand for control purposes, must be fixed in advance.

It would be better to have a square film than an oblong, for one cannot control the exact position of the camera, which sometimes develops a slow spin, and in making calculations for area covered one can only take into account the shorter side of the film. For this purpose I usually draw circles on a squared plan of the dig, and take with me a slip on which I have noted the position of the centres of these.

The site of Megiddo is divided for survey purposes into 25-metre squares : these squares are drawn on our plans, and their corners are marked on the ground by pegs. I had placed a hollow concrete brick round each peg, for protection, and we have found that these bricks show up very clearly and distinctively on the photos. They are very helpful in preparing our finished prints.

It is more difficult than one would suppose to get the balloon at

exactly the same height for all photos, and occasionally the exposure is made at a moment when the camera has swung a little out of the horizontal, making the squares smaller at one end than at the other. In practice, however, neither of these things matters in the least, for we do not use contact prints much, but enlarge to a scale of 1 : 250, and any necessary corrections for scale and distortion are made by focussing the enlarging camera, and tilting the enlarging board, until the hollow bricks on the image coincide with the corners of squares drawn to this scale upon the board.

Apart from some 17,000 square metres which have been dug for dumping on, on the slopes round Megiddo, the whole summit of the mound, which has about the same extent (13 acres) as the Tower of London including the moat, is under excavation. We have photos, enlarged to the 1 : 250 scale, showing this area as it looked last spring, and Lind has made up two mosaics from these measuring 1.3 metres across. One has been sent to Chicago as a record; the other is a working copy, and as such it is in constant use on the dig and in the drawing office.

Megiddo is a deeply stratified site dating from about 350 B.C. to chalcolithic times, and we are excavating it, stratum by stratum, over its whole area. Most of the walls we are finding at present are of rubble and mud, and such a wall belonging to one period can look abominably like one belonging to another, especially if it happens to be connected with nothing in particular. It will be understood that a large-scale air-mosaic is a very great help in disentangling one stratum from another : for one thing it often makes it possible to see which walls belong to a particular system of alignment, and for another, it permits one to compare buildings which are perhaps a hundred or two yards apart—having spotted a similarity on the mosaic, one can walk over and verify it (or not) on the ground.

We of course do what we can to date buildings by the pottery and objects found among them, but in addition, and for making the plans, we proceed thus. Lamon (who does most of the surveying) and I go on to the site taking the mosaic with us, and compare it with the ruins on the ground. We decide which remains belong to say stratum 1, and mark them with a splash of paint, making a corresponding ink mark on the mosaic. The marked ruins are then planned and levelled in the ordinary way, and here also the mosaic is helpful for detail. When the plan is complete the marked ruins are removed ; what lies below is re-photographed, and the whole process repeated.

There is another gadget which I have found useful both for photography and for observation : it is an extensible ladder, of the type used for cleaning street lamps, which winds up to a height of 9.7 metres, and it gives a good view over a considerable area. I have had its stability increased by fitting four really stout guy-ropes, and have proved it to be safe even in a fairly strong breeze. (Plate IV).

Running through these notes I see that I must apologize for their rather scrappy nature : they lack the finish that one has come to expect in articles accepted by the Editor. But excavators who may happen to read them will perhaps excuse this when I explain that they have been jotted down at odd moments while the dig is going on.

There is one thing that worries me. We have got quantities of fine, large-scale air-photographs of Megiddo, and we shall have lots more, and shall make a mosaic of each stratum. The originals can be seen and studied by people who happen to be in Chicago, where one set will be kept, or who visit us here on the site. But I can't quite see how I am going to publish them, at their useful scale of 1 : 250, without producing a book or portfolio that only a son of Anak could handle.

At present my idea is to publish a selection of them on a reduced scale in a volume of normal archaeological format and to provide, as a kind of supplement, to be purchased optionally at a small extra cost, a set of lantern slides which those who wish can throw on a screen. Slides are all too often used only once, at a lecture, and are then put away in a box. Few people bother to get out a lantern and use the projected image for quiet study at close range : it is a method I have tried and can recommend.

But whatever means we may find for publishing our balloon-photos (we shall find one somehow) the main point about them is this —and all diggers who have seen them agree about it—they have a high and lasting archaeological value.

The Kelts in Britain

by Iorwerth C. Peate
Assistant Keeper, National Museum of Wales

SIR JOHN RHŶS, whose name is justly honoured by all students of the history of Britain, is nevertheless indirectly responsible for much vague conjecture concerning the Keltic problem by English archaeologists. I write ' English ' advisedly, for Irish archaeologists —with a profound knowledge of Keltic philology—have definitely refuted the theories propounded by Rhŷs and maintained in various modified forms by subsequent archaeologists in England. In Wales, the other Keltic country concerned, archaeology unfortunately remained up to recent times the happy hunting-ground of antiquaries whose knowledge of both archaeology and philology was very restricted. Her professional archaeologists, in more recent years, have been hampered by an ignorance of the philological problem and have therefore naturally subscribed to the point of view of the modern English school of thought.[1] On the other hand, some Welsh philologists, often with little or no knowledge of the archaeological evidence, have ridiculed the theories advanced by Rhŷs and the later English writers on the subject. My present purpose is to submit to the readers of Antiquity a case for relinquishing entirely the generally accepted attitude of modern English archaeology towards the Keltic problem.

Rhŷs,[2] elaborating a theory advanced by Edward Lhuyd[3] in the 17th century, postulated that the island of Britain was invaded by two waves of Kelts. First came the Goidels who settled here ; then followed the Brythons. Finding that the consonant Q, where it occurred in the ancient forms of the Irish language, was replaced by P in the corresponding forms of the ancient British language, Rhŷs

[1] But it should be noted that in 1925 Dr R. E. M. Wheeler, then Director of the National Museum of Wales, wisely refused to commit himself on the subject (*Prehistoric and Roman Wales*, pp. 6–7). Professor V. Gordon Childe's admirable summary (in *The Bronze Age*, pp. 242 *et seq.*) should also be noted.

[2] See, for instance, *The Welsh People*, chapter I.

[3] In his Welsh preface *At Y Kymry*.

divided the Kelts into two linguistic groups which he named the Q-Kelts and the P-Kelts. Now this linguistic classification, which is acknowledged as fundamental by all philologists,[4] was projected by Rhŷs into the archaeological field, and for his purpose he utilized the term ' Goidel ' to represent the Q-Kelts and ' Brython ' the P-Kelts, thus giving to a fundamental philological occurrence an archaeological and geographical significance for which there was, as will be seen later, no justification. Rhŷs's chronology of course need not concern us here for it has been abandoned, as far as I am aware, by all archaeologists.

But this dangerously unsound archaeological torsion of a simple philological classification has been tacitly accepted in many quarters. Déchelette[5] refers to ' la première invasion de la Bretagne insulaire admise par les celtistes, celle des Goidels '. O. G. S. Crawford[6] suggests that invaders arriving about 800–700 B.C. ' may have been Goidels '.[7] H. J. E. Peake[8] accepts the P and Q theory almost in its entirety. He states that archaeological evidence proves that ' the thesis of Sir John Rhŷs that two waves of people left Central Europe for Italy and the west, the first speaking a Q and the second a P tongue is absolutely correct '. The authors of *St. Catharine's Hill*, though expressing a desire ' to avoid the tangled linguistic controversy (!) involved ' also accept the classification.[9] Indeed without referring to any other authority, it may be said that the P and Q classification has become an accepted formula in modern archaeology.[10]

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[4] The *p* and *q* classification in philology is well established. Labio-velar *qu* becomes *p*, *e.g.*, Gaulish *penno–*, Welsh *penn* ' head ' but Irish *cenn ;* Gaulish *pempe–*, Welsh *pump* ' five ' but Irish *cóic* (*cf.* Latin *quinque*) ; Gaulish *–epo–*, Welsh *ebol* ' colt ' but Irish *ech* ' horse ' (*cf.* Latin *equus*). See, for instance, Georges Dottin, *La langue gauloise*, p. 98.

[5] Vol. II (Hallstatt), p. 76 and note. [6] *Antiq. Journ.*, II, 27.

[7] Later on however (*Antiq. Journ.* II, 207) Crawford, in the light of new evidence from Ireland, is ' prepared . . . to look for another name to distinguish (the) invasion '.

[8] *The Bronze Age and the Celtic World*, chapter 8. [9] pp. 151, 161.

[10] A prominent anthropologist, Professor F. G. Parsons, D.SC., in a lecture for the Royal Anthropological Institute in 1930 (see *Early Man*, p. 72) provides an outstanding example of the uncritical way in which the theory has been accepted. Parsons writes : ' Two waves of Celts are recognized. Firstly, the Goidels, Gaels, or " Q-Celts ", (who) quickly passed or were driven from England into Ireland, the Highlands of Scotland and the Isle of Man, where their language, abounding in K and Q sounds, (!) is still heard. Secondly, the Brythons, Britons, and " P-Celts " who used a p or b where the Goidels used a k. These people, who called themselves Cymry, spoke a language akin (!) to modern Welsh '.

But this classification before (approximately) the 3rd century B.C. is fundamentally unsound and no modern student of Keltic philology can possibly accept it. Professor O. J. Bergin's statement[11] that ' there is not enough Old Gaulish material extant to solve the problem of the early distribution of the Q- and P-Celts, or the date of the change from Q to P ' is a very temperate statement of one aspect of the case. Phonetic changes such as the substitution of P for Q spread, as Eoin MacNeill[12] suggests, ' in an almost mysterious way through languages. Their spread may be arrested by a geographical barrier so considerable as the Irish Sea, but it [is] not at all likely to have been brought to a stand by the waters of the Seine and Marne '. But a belief in such an arbitrary arrest is necessary to accept Rhŷs's archaeological interpretation of a perfectly justifiable philological classification.

It can be stated definitely that no case for a clear-cut distinction of the nature posited by Rhŷs to have existed between the language of the western Kelts and that of the Belgic Kelts on the continent can be defended, and I venture to believe that, with the added light of recent philological and archaeological research, Rhŷs would himself have abandoned his theory as he abandoned many other theories. ' He himself never regarded a theory as more than a working hypothesis ; and no one was ever readier to discard a theory when it was found not to be consistent with all the facts '.[13]

All workers in archaeology welcome the results of the researches of present-day archaeologists into the incidence of the prehistoric invasions of Britain. Of the invasions there can be no doubt ; but the modern archaeologist is open to just criticism when he equates archaeological periods with philological events for the dating of which there is no evidence.

Assuming the invasion dated by Crawford[14] at about 800–700 B.C., by other writers two or three centuries earlier and by others later by a similar period, to be Goidelic, there is no reason, as Professor Eilert Ekwall[15] points out, why there might not be some Goidelic place-names in England preserved from the time of the early settlements. But although there is evidence of Brythonic place-names in England, there is, as far as I know, no evidence of Goidelic names. Ekwall states

[11] Quoted in *Antiq. Journ.* II, p. 205. [12] *Phases of Irish History*, p. 46.
[13] Sir J. Morris-Jones, *Sir John Rhŷs Memorial Lecture*, p. 12.
[14] *op. cit.*, p. 27. [15] *Introduction to the Survey of English Place-Names*, p. 32.

that 'no certain Goidelic names have so far been pointed out', and Dr O. K. Schram[16] maintains that he is ' certain that nothing further will come to light that will falsify Ekwall's definite pronouncement '. It may of course be held that the Goidelic language and place-names must have been totally superseded by Brythonic, but such a negative argument would have little validity without a strong backing of positive evidence which is, of course, not forthcoming. Rhŷs, however, overcame this difficulty and fortified his argument by attributing the Ogam inscriptions to the descendants of the Goidels who had held their ground in Britain. But this untenable theory has long been discarded. Indeed the only ' Goidelic ' elements found in the English place-nomenclature are due to the much later influence of the Viking settlements, in the northwest and north especially, and of Irish missionary enterprise along the west coast.

Some archaeologists have gone further, and, following Rhŷs, have maintained that the Keltic settlement of Ireland was effected through Britain, though E. C. R. Armstrong[17] has shown, with much cogent argument, that ' the view that Ireland was not colonized by the Celts until the late Celtic period demands consideration ', and has emphasized the complete absence from Ireland of the later Hallstatt material. Dr R. A. S. Macalister,[18] corroborating this view, adds in the true scientific spirit : ' Nothing can be assumed against the possibility of such a discovery [as All Cannings Cross] in Ireland : although it may fairly be remarked that it would prove subversive of all the theories of occupation that have been forming themselves on the basis of the knowledge hitherto acquired, and that seem to fit the facts so far as they are known '. He maintains that 'the absence of Hallstatt pottery strongly weighs the balance against the presence of Hallstatt people '.[19]

There is, of course, no reason to suppose that there was no relation

[16] In a letter to the writer, December 1931.

[17] *Antiq. Journ.*, II, 205–6. [18] *The Archaeology of Ireland*, p. 133.

[19] In a recently published work (*Tara : a Pagan Sanctuary of Ancient Ireland*, p. 90), Macalister writes : ' Archaeological evidence dates (the Keltic occupation of Ireland) about 400–350 B.C., but the old historians would have us believe that it took place about 1300 years earlier '. A view similar to that of the 'old historians' was expressed in 1921 by M. J. Loth (*Revue Celtique*, 1921, p. 288) who referred to the first Keltic invasion of the isle of Britain ' au commencement du deuxième millénaire avant notre ère '. It may be remarked for the guidance of those archaeologists who regard this pronouncement seriously that it is entirely discounted by the great majority of Keltic philologists.

between Ireland and Britain in prehistoric times or to conjure up an insuperable barrier between the two islands as is implied in the writings of Zimmer,[20] Meyer[21] and their school. The presence in Central Wales of such artifacts as arrowheads of Antrim flint,[22] of Irish type and of Bronze Age date, alone proves otherwise. But without participating in the excesses of some of the writers of the Meyer school it may be held that the origin of the *via*-Britain theory of the Keltic colonization of Ireland seems to have been founded on a belief that the only way to Ireland from the continent is through Britain[23]—a view inconsistent with the evidence of prehistoric migrations. This aspect of the Keltic problem has however to be judged in the light of philological as well as of archaeological evidence, and one cannot fail to accept Ekwall's pronouncement[24] : ' The theory [that the Goidels were partly driven westward to Ireland from Britain] is not founded on very strong arguments. The theory . . . that they actually did reach Ireland direct from France or Spain, not by way of England, seems to the present writer to have considerable probability'. It may be added that the Old Irish numerals, still in use by shepherds in Cardiganshire, which have been examined in detail by my friend Professor Alf Sommerfelt[25] of the University of Oslo, present no evidence of Goidelic survivals in Wales which cannot be accounted for by invasions from Ireland.

The conclusions which I wish, therefore, to draw are: that modern archaeologists should abandon all attempts to equate invasions for which there is archaeological evidence with philological events for the dating of which there is no evidence; that an arbitrary classification of the Keltic peoples of prehistoric times into Q-Kelts and P-Kelts is —in an archaeological context—fundamentally unsound, and that archaeologists who—in their ignorance of Keltic philology—wittingly or unwittingly maintain this method of nomenclature are open to ridicule ; and, finally, that the whole problem of the Kelts in Britain, insoluble without the help of philology, should be re-examined by archaeologists in the light of these conclusions.

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[20] *Auf welchem Wege kamen die Goidelen vom Kontinent nach Irland?*

[21] *Trans. Hon. Soc. Cymmrodorion*, 1895–6. [22] *Arch. Camb.*, 1930, p. 200.

[23] *cf.* for example T. Rice Holmes (*Ancient Britain*, p. 446) : ' It is hard to believe that they would not have directed their immigration towards Britain, the nearer country '. See also G. Coffey, ' Archaeological evidence for the intercourse of Gaul with Ireland before the first century ' in *Proc. Roy. Irish Acad.* Sect. c., XXVIII, 96–106, and Zimmer in *Sitzungsberichte der Königlich Preussischen Akademie der Wissenschaften*, 1909.

[24] *op. cit.* p. 32. [25] *Des noms de nombre irlandais au Pays de Galles.* Oslo, 1925.

British Hanging-Bowls

by T. D. Kendrick

THE first person to introduce these bowls to the archaeological world as a group, and with appropriate comment, was that profound student of Celtic art, the late Mr J. Romilly Allen[1]; subsequently, Mr Reginald Smith set himself the task of making a complete list of all the bowls, or parts of bowls, that were known[2], and he has since placed us further in his debt by the care he has taken in seeing that every new example, as it came to light, was adequately recorded. Since Mr Allen wrote his paper, however, we have not made very much headway with the main problem of deciding their position in the cultural history of this country; even the recent discovery of the beautiful Winchester bowl, that excited us so much in 1930, was allowed to pass without any revision and revaluation of the really astonishing material that had been collected by Mr Smith, and it seemed that the chief interest aroused by the bowls was for ever to be focussed on the apparently insoluble problem of their use. But last year my friend Mr J. D. Cowen published a paper[3] that constitutes in many respects a very important advance; it was the stimulating kind of article that often provokes other people into rival activities, and I hope it will not be counted against him if I admit that one of his results was an immediate decision on my part to put into print the notes I had collected on this same subject.

It is Mr Cowen's distinction that he is the first to isolate and appreciate the 'heater' group of bowls, to which I shall refer below, and there are several other points in his very vigorous paper that strike me as being valuable and sagacious observations. But what I have to say here and now is that if Mr Cowen is right throughout, much that I am going to say below is completely wrong. I must explain, therefore, that it is fascinatingly easy to be wrong about

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[1] *Archaeologia*, 1898, LVI, 39.

[2] *Procs. Soc. Ant.*, 1907–9, XXII, 66.

[3] *Archaeologia Aeliana*, 1931, series 4, VIII, 329.

hanging-bowls, because some very hard work has got to be done before we begin to understand them properly ; so, having uttered this caution, I will say further that I do not think I shall be very apologetic if I am eventually numbered among those who have erred. The really important thing, as Mr Cowen will agree, is to formulate at least some sort of theory that attempts honestly to answer the fundamental question as to date and origin ; we must, we feel, rid ourselves of the charge of being frightened by these bowls. That is why I have purposely stated my views with imprudent outspokenness, knowing that all bowl-lovers will sympathize with my difficulties, and will perhaps forgive me for the omission of numerous reservations and qualifications that caution would have had me insert.

Hanging-bowls of bronze, already known in this country during La Tène times,[4] returned into fashion here in the second half of the Roman period. There was a simple and nearly hemispherical type of bowl of beaten bronze, with a cupped base and an in-turned rim, that was popular at this time in Roman Britain (to the best of my knowledge it is not found abroad), and it could be made to hang by fastening hooks and chains to it. You can see examples, without the hanging-attachments, in a hoard of bronze vessels (now in Northampton Museum) from the Romano-British settlement-site at Irchester,[5] and I illustrate one of them here, together with a strainer from the same hoard (pl. I, 1 and 2). An approximate date, about A.D. 400, is suggested for its hiding by the inclusion in the group of a standing bowl with a flanged and embossed rim[6] ; but you can also compare the strainer with another in the Kingadle hoard[7] (found with 3rd century coins) from Wales, or look up the Halker group[8] of bronze vessels from Flintshire (which includes a bowl of Irchester type and a handled bowl with triangular ears, also in use about 400) in order to satisfy yourself

[4] A handsomely engraved 4-loop bowl, with a flange and collar made separately from the body and joined to it by rivetting, comes from Denbighshire ; it was made in the 2nd cent. B.C. *Antiquaries Journal*, 1926, VI, 276.

[5] *Associated Architectural Societies Reports*, 1875, XIII, 89.

[6] For this bowl-form abroad see *Germania*, 1931, XV, 259, and Lindenschmit, *Handbuch*, 1889, I, 479.

[7] *Archaeologia Cambrensis*, 1901, series 6, I, 24. The Kingadle strainer is, however, of an earlier type than that from Irchester ; cf. H. Willers, *Neue Untersuchungen über die Römische Bronzeindustrie*. Hannover, 1907, p. 84.

[8] *Archaeologia*, 1803, XIV, 275, pl. XLIX.

further that the Irchester bowl-form is likely to be late Roman. There are, of course, several examples from other places ; one (Maidstone Museum) comes from an Anglo–Saxon grave at Lower Shorne in Kent; one comes from the hoard found at Wotton[9] in Surrey, and another from the Sturmere find[10] in Essex, and in both these instances the hoards include frying-pans with folding handles that are late Roman (or even Coptic), rather than very early Roman.[11]

The Irchester type of beaten bronze bowl can be seen complete with attachments for hanging ; two examples are among a group of

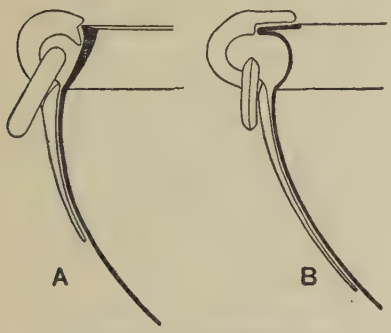

Fig. 1. A. CHESSEL DOWN
B. HAWNBY

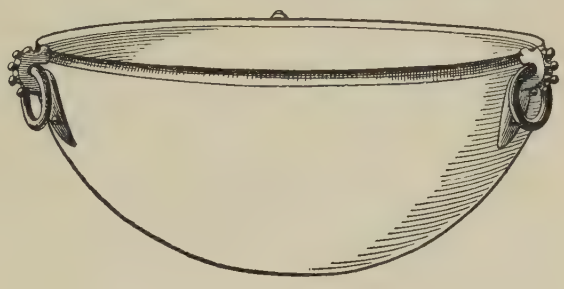

Fig. 2.
FINNINGLEY (D. 12¼")

vessels found at Finningley in Yorkshire, one comes from an Anglian grave at Sleaford in Lincolnshire, one from the Jutish cemetery on Chessel Down in the Isle of Wight, one from Faversham in Kent (probably from a Jutish grave also), and another (pl. 1, 4) comes from the Grind Low barrow in Derbyshire. There is also an imitation bowl of this form, made of cast, not beaten, bronze, that comes from Barlaston in Staffordshire. In the Grind Low bowl the hook-attachments, which had circular escutcheons, are now missing, but you can still see the scars that they have left ; in the Faversham and Barlaston bowls the escutcheons are also round and are enamelled ; in all the other

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[9] *Procs. Soc. Ant.*, 1914–15, xxvii, 76. The usual dating for this hoard is Early Iron Age, and the large vessels therein are compared with the big vessel that contained the late La Tène Santon Downham hoard ; but this, like all authentic La Tène vessels of respectable size, belongs to the composite sheet class, whereas the Wotton vessels were beaten out in one piece.

[10] *Archaeologia*, 1809, xvi, 364.

[11] Cf. *American Journal of Archaeology*, 1921, xxv, 44.

instances they are heater-shaped and not enamelled.[12] On examining the bowls of this series you notice that the rim-form is not really suitable for the attachment of the fittings ; the end of the hook does not fit very comfortably against the lip of the vessel, for the receding rim does not allow the notch or ' bite ' in the terminal to get a firm hold of the edge. Most hanging-bowls, accordingly, differ from the original Irchester pattern by having a wide and flattened lip, this flat top being a fold of the metal sheet pressed inwards and downwards into a horizontal position ; the terminal of the hook could then take the form of a long flat-bottomed snout that would rest firmly on the broad surface of the lip. A comparison between the Chessel Down bowl and a hanging-bowl from Hawnby in Yorkshire will illustrate this alteration in rim-form (fig. 1). Apart from this change, however, the bowl itself remains very much the same ; the body becomes a little fuller, so that the profile tends to become rectangular rather than triangular ; the cupped base becomes deeper and has a flat roof ; but even if you look at the grandest and latest bowl in the whole series, you will see that you are still dealing with a near relative of the simple Irchester vessel.

There is no doubt that loop- and hook-fittings on the edges of metal bowls and vessels, either for the attachment of suspending chains or (if in close-set pairs) swing-handles, were not uncommon in the Roman provinces during the Late Empire. The more elaborate fittings take two forms ; one has an elongated pear-shaped escutcheon and a hook in the form of a bird's head bent *outwards*, and the other short escutcheons of varied shapes with a hook in the form of a lion's head or a snouted creature, bent *inwards*. In our island you can see examples of the first in the Traprain Law hoard,[13] and also, so Mr A. O. Curle tells us, among the Roman antiquities from Cirencester ; there are specimens of the second kind, mounted on bowl-rims, in the celebrated late Roman finds made at Sackrau[14], and there is a very good example, showing a fine lion's head and a triangular escutcheon, from this country in the Silchester collection at Reading. We have also a considerable number of elongated triangular plate-attachments bearing

[12] Strictly speaking, I suppose, heater-shaped should mean triangular ; but for convenience I am following Mr Cowen and making the term include also the elongated pear-shaped type of escutcheon.

[13] A. O. Curle, *The Treasure of Traprain*. Glasgow, 1923, p. 38, pl. XVII.

[14] Grempler, *Der Fund von Sackrau*. Breslau, 1888.

simple round loops, which may have served the same purpose as the more ornamental fittings. There is nothing very remarkable, then, in the fact that hanging-attachments should be added to native Romano-British bronze vessels of the type of the Irchester bowl, and it is not by any means absurd to suppose that our earliest hanging-bowls were made before the Roman period was over.

One of these early bowls comes from Sleaford in Lincolnshire (pl. 1, 5); it is of the type that still has the simple in-turned rim, and it had four (two are now missing) miserable little hook-attachments that are obviously an imitation of the fastenings with out-turned bird's heads such as we find in the Esquiline treasure, or on the Traprain Law dish (pl. 1, 3), which has four hooks like the Sleaford bowl. This vessel was found in an Anglian grave, but it was old and patched before it was buried, having, in fact, the worn-out bottom replaced by a new piece of metal. There is no reason why it could not have been made in late Roman times, though there is no proof that it was. We are interested in it chiefly because it is the solitary example of a native bowl that is fitted with out-turned hooks. All the other bowls that we are going to notice have the hooks turned inwards, like the Silchester fitting, though the heater-shaped escutcheon and the bird's head of the Traprain type of fitting were adopted for regular use by our bowl-makers.

The two hanging-bowls from Finningley are, I think, the earliest that we have in this country; my reason for saying this is that they were found in a group of vessels which included three examples of the standing bowls with flanged and embossed rims, such as we have already noted in the Irchester hoard. The two bowls are very much alike, and I illustrate only one of them here (fig. 2[15]). It is of the primitive Irchester form and it has three escutcheons (the Sackrau, not the Traprain number) with lively little animal-heads as hooks, these being provided with 'manes' in the tradition of the Celtic 'fire-dogs'. One of the bowls is a 'water-clock' as the prick of the turn-table or pivot on which it was beaten has perforated the cupped base,[16] and the other has a dent that very nearly, but not quite, turns it into a 'water-clock'. It seems to me to be not improbable that the date of these two bowls may be as early as the 4th century.

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[15] From a photograph kindly supplied by Dr W. Collinge of the Yorkshire Museum.

[16] Cf. A. Götze, *Die altthüringischen Funde von Weimar*. Berlin, 1912, p. 19, fig. 15.

Another instance of the Irchester type of bowl adapted for hanging-purposes comes, as I say, from Chessel Down in the Isle of Wight (pl. II, 1); this has facetted sub-triangular escutcheons with animal-headed hooks (fig. 1, A) which I take to be a version of the Sackrau type of fitting, such as was found at Silchester. It also has a perforated base,[17] like the first Finningley bowl, and there is every reason to suppose that it was made at an equally early period. To illustrate the hanging-bowls with heater-shaped escutcheons that were made at a later date and possess the folded-over rim, we have the Hawnby vessel from Yorkshire (fig. 1, B), and the magnificent bowl in the Oslo Museum from Skomrok in Lyngdal, which has a diameter of no less than 18¼ inches (pl. II, 2); this was found in a Viking grave with, among other things, a glass linen-smoother, and may have been a very old bowl when its last owner died. Like several other bowls of this type found in Norway, it had been strengthened by an iron band round the rim. We must also note that, like two bowls found in this country (Capheaton and Basingstoke), its base bears an engraved rosette composed of intersecting semicircles.

So many foreign objects were imported into Norway at the end of the Roman Iron Age, including late Roman types of bronze bowls, that I do not think we need regard all the hanging-bowls of the Skomrok type as being necessarily loot obtained by the Vikings; some of them may quite easily have reached Norway long before the Viking Period began, and I am inclined to think that we ought to date the Hawnby and Skomrok bowls to about the 6th century, and not much later.[18] It may be taken for granted, however, that the fold-over rim does not appear anywhere before the middle 5th century, and I believe that the flat-topped hollowing of the base (to be contrasted with the watch-glass, or cupped, hollowing of the Irchester-Finningley-Chessel Down group) is another sign that we are advancing into the Dark Ages. There is a hanging-bowl from the Castle Yard in York, with an embossed silver print (fig. 3, A) inside and outside the base, that is probably of the same date as the Hawnby bowl; but, on the other hand, a bowl from Caistor in the Lincoln Museum may possibly be dated in the 5th century; it has circular escutcheons (fig. 3, B) bearing ring-and-dot patterns,

[17] The hole had been plugged with lead.

[18] On the other hand, some of the Norwegian non-enamelled 'heater' bowls may have been made in the 7th–9th centuries, *e.g.*, the Ulstein bowl in Bergen Museum.

animal-headed hooks, and rather Roman-looking concentric rings of finely engraved lines on the underneath side of its base.

In England the series of hanging-bowls with plain (*i.e.*, not enamelled) heater-shaped escutcheons ends with vessels of the Hawnby type ; but this does not bring the history of the heater escutcheon to a close, because this variety of hanging-attachment was subsequently made in Ireland, and there are several examples, sumptuously enamelled in the Irish enamel-style of the 8th and 9th century, that have been found in Viking graves abroad. I illustrate one of these later escutcheons that comes from Hoprekstad in western Norway (pl. VIII, 4). It belongs

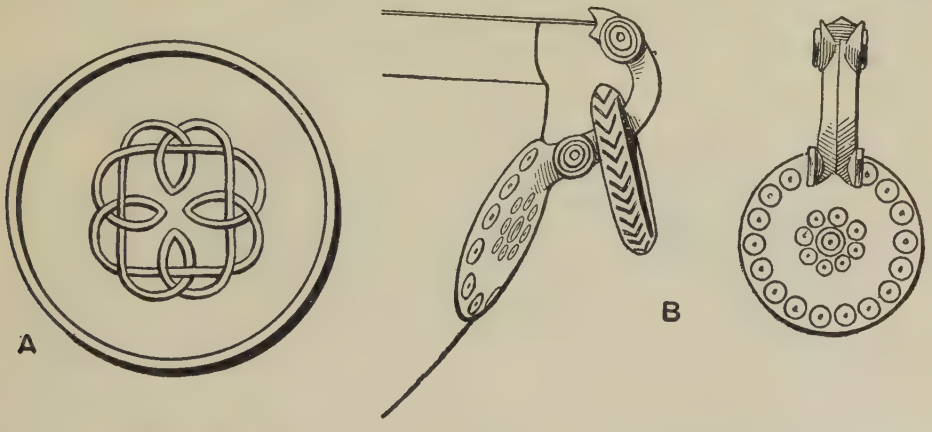


FIG. 3

A. CASTLE YARD, YORK B. CAISTOR

to the same Irish school that produced the anthropomorphic enamelled handle-fittings of the kind that adorn the 'Buddha' bucket (pl. VIII, 3), found among the treasures in the Oseberg ship. We have yet to note, however, that at a much earlier period in England the heater escutcheon once or twice seems to have attracted the attention of the enamellers. Examples come from Faversham in Kent, Needham Market in Suffolk, and from Basingstoke. The escutcheons from the last two places belonged to bowls of the 6th or 7th century[19] ; but the Faversham fittings (pl. V, 5) are much earlier, possibly 4th or 5th century. They consist of an escutcheon and a print, both decorated with a dainty little spiral pattern, and on the escutcheon you will see that three

[19] The Basingstoke bowl has fish-tailed escutcheons and an extremely complicated intersecting circle device engraved on the base.

of the spiral-terminals have ' eyes ' ; this design is closely connected with that on certain rare embossed disc-brooches of the Roman period and on a few Celtic ' latchets '. The zoomorphic terminals, best seen on one of the latchets, are, in my opinion, ultimately to be derived from the well-known Roman dragon-brooches ; but you have to add a third head and arrange the brooch triskele-wise so that it fills a circle, in order to approach the latchet and disc-brooch design.

Before we pass to the hanging-bowls with escutcheons of the 'Enamelled Disc' class, we must say something about those that have 'Openwork Escutcheons'. There are only two examples, the Wilton bowl, and a vessel that is represented by a set of three escutcheons

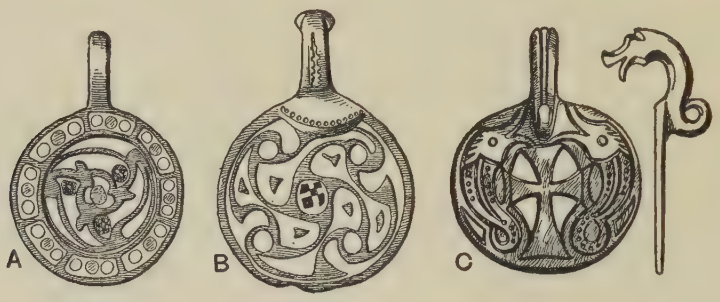


Fig. 4. ENAMELLED ESCUTCHEONS FROM (A) NORTHUMBERLAND (B) BARLASTON (C) FAVERSHAM

found at Faversham. The Wilton bowl[20] is assuredly early, not later, I should think, than the beginning of the 5th century ; it has a very narrow fold-over rim and four escutcheons (cf. the Sleaford and Lullingstone bowls), which are attached by rivetting[21] ; they are not enamelled, and are decorated simply by a cruciform design in openwork, achieved by cutting out four pelta-shaped pieces from the field. The Faversham escutcheons (fig. 4, c) contain a Latin cross in openwork, flanked by two fish-like creatures with markings in red enamel ; these may date from the 5th, or possibly 6th, century, and seem to me to show the influence of the church in France about the time of the conversion of Clovis. The Latin cross occurs several times in early Frankish (or late Gallo–Roman) antiquities, and is known also in

[20] Baldwin Brown, *Arts in Early England*, iv, pl. cxviii.

[21] On the subject of rivetting and soldering (the usual method), see Mr Cowen, *op. cit.* p. 332.

English cemeteries (*e.g.*, Chartham Down, Kent), so that it would be rash to say that it is exclusively late. Moreover, in this instance it may be regarded as a cross of the Wilton type that has only become Latin because this is demanded by the design of which it forms part. If you want to see this sort of openwork bronze casting, complete with cross and gaping animal-heads, abroad, you will find it on late Gallo-Roman antiquities in the Vermand cemetery.[22] I may add, furthermore, that on the English evidence I regard the thick ribbed hook and the fiery little head of these mounts as being early.

The most decorative of the hanging-bowls are those fitted with escutcheons in the form of enamelled discs. One bowl (Benty Grange, see below, p. 178) stands apart from all the others in this class, but the rest can be provisionally grouped under three sub-headings, I—the 'Romanizing' Series; II—the 'Ultimate La Tène' Series; III—the 'Developed Trumpet-Pattern' Series.

I. The 'Romanizing' Bowls are of two kinds, one (A) having large and very crudely ornamented escutcheons, and the other (B) having small escutcheons that show much neater and better controlled enamel-work. An intermediate form (A–B) is provided by the well-known Lullingstone bowl, to which I shall refer presently.

The 'A' bowls are unfortunately represented only by escutcheons and prints, and by fragments of enamelled bronze strips that edged the base, and perhaps adorned the sides, of the now vanished vessels. There is a fine set from Dover (fig. 5) in the museum of that town, and there is also a set from Mildenhall in the Cambridge museum, both of which include enamelled prints from the bases of the bowls. The excessively coarse, but showy, enamel-work in these sets deserves careful examination; when you look at it closely (particularly one or two of the Dover discs) you will see that it is executed in the tradition of a recognized and famous school of Romano-British enamelling, the school that was producing at the beginning of the 2nd century such gaudy works as the West Lothian patera and the Bartlow Hills cup. You will notice, moreover, that these discs all bear travestied versions of classical patterns. Now constant features of the early pieces are a foliage belt of pairs of 'floating' leaves that are separated from their stalk, and a very pronounced toothing at the edges of the enamel fields (fig. 6); it seems to me that both these features occur in the Dover

[22] See, for instance, *Mem. Soc. Acad. de St. Quentin*, 1888–9, series 4, IX, pl. 15, no. 11.

escutcheons, where you have the floating leaves, either in pairs or singly, in the margin, and the toothed edging as a separate jagged and irregular ring inside. Not everyone, however, will agree about this ; but if we pass on to the ' B ' bowls, we shall find there is an example from Faversham in Kent (pl. III) with applied strips on its base and sides that reproduce really very closely this foliate border of the earlier

FIG. 5. 'ROMANIZING' ESCUTCHEONS AND PRINT, DOVER MUSEUM (½)

enamels (cf. the Braughing cup, pl. VII). When we add to this the fact that the Faversham bowl is of the simple Irchester type, we see that it may be possible to make out a case for dating some of these ' Romanizing' bowls in the 4th or early 5th century. We must also note the prints of the Faversham bowl (fig. 7, 1) for these confirm the impression of early date ; one of them shows a frieze of little animals in the 'free' style that appears on the continent in the 4th century, and the other a familiar Roman linked-loop device, here cut open and having the loose ends provided with animal heads. Two other bowls of the

'B' kind come from Kent (Kingston cemetery), and I shall refer to them later on in connexion with the dating of the graves in which they were found (p. 182–3). They have folded rims and are probably a little later in date than the Faversham bowl; I illustrate one of them (fig. 8, A), and I will content myself with observing here that the enamel-work of their escutcheons is technically the same as that on many Roman enamelled disc-brooches, a remark which also applies to the escutcheons of the Faversham bowl.

Easily the most interesting bowl in this 'Romanizing' series is the famous vessel that was found at Lullingstone in Kent (pl. IV). It has four escutcheons, which we may on our present knowledge reasonably take to be an early feature; it is decorated with applied strips, which also seems to be a sign of early date in England; it has applied figures of animals, fishes, and birds, in the 'free' style (which remind us of the figures pinned on to the late Roman Thorsbjerg plaque);

FIG. 6. DETAIL OF ENAMELLED PATERA, LINLITHGOW

it bears a guilloche pattern such as might have been derived from Roman pavements, or from wire-work like that on the Rhayader enamelled bracelet; it shows a simple key-pattern exactly like that on the strip-work of the Mildenhall bowl; most of the enamelling is technically of the Dover-Mildenhall school, and we recognize this identical craftsmanship (so far as casting and finish are concerned), and some of the same patterns, in early continental work, particularly certain buckles. Everything, in fact, points to an early date for the Lullingstone bowl, except for the awkward circumstance that the escutcheons themselves bear a trumpet-pattern device that, ordinarily, would not be dated earlier than the 7th century. I think, however, that many of us have felt for some time that this pattern must have been used at a considerably earlier period; when we find it crystallized and perfect, a pat, familiar formula of the manuscript-illuminators of the middle 7th century (*e.g.*, the Book of Durrow), we can fairly assume that a considerable amount of experiment, first in metal-work and then in painting, must have preceded its appearance; yet we all know that it is extraordinarily difficult to trace it further back.

I believe, however, that the constituent elements of the trumpet-pattern, as seen on the Lullingstone escutcheons, were known in late Roman Britain. Look at the pattern shown in fig. 9, left, which is the design on the inner panel of a well-known enamelled plaque of late Roman date that was found in the Thames, and set yourself the problem of converting this rectangular pelta-design into a form that will serve to decorate a circular space. You have got to arrange the peltas, with

Fig. 7. ESCUTCHEONS
(1) FAVERSHAM, (2) KINGSTON, (3) LULLINGSTONE, (4) BARRINGTON, (5) LOWBURY
All natural size, except 4 which is reduced

their interlocking expanding appendages, in a quite different way. Try with the two peltas that you have already, and you will not succeed. But take a third pelta; link up the ends of the three in the centre of your circle, and join up the attachments of each pair so that they reach towards the circumference of the circle; you will then find you have made a capital piece of 'Celtic' trumpet-pattern (fig. 9, right) directly out of a later Roman design. After this experiment, we are not going to believe that the trumpet-pattern enamels must necessarily be as late as the 7th century.

I do not pretend that the trumpet-pattern of the escutcheons is directly derived from the ornament on the Thames plaque ; on the contrary, I believe that Mr Romilly Allen was right in saying that it owes almost everything to embossed metal-work (and perhaps wood-carving) that we no longer possess. But if we look at the Lullingstone escutcheon (fig. 7, 3), we see that it does represent the 3-pelta arrangement that I have described, though the arms have been altered to fill up the space by the introduction of a ' metal ' joint, and, consequently, one set of the little ' leaves ' has got into the wrong place. We observe, also, that this design is executed throughout in coarse line ; there are no fields of metal set off against the enamel, as in many of the better executed trumpet-pattern escutcheons, and I interpret this as a sign that the maker of the Lullingstone bowl was painfully copying a design that was still unfamiliar to him. He was, I feel, one of the first to make use of the trumpet-pattern in a circlet of champlevé enamel, and not a craftsman well used to this design.

For this reason I think that the Lullingstone bowl should take its place at the end of the ' Romanizing ' series of hanging-bowls, which have escutcheons that show the inspiration of classical ornament, and I think that it should not be dated later than A.D. 500. Perhaps we should find that the Keythorpe bowl (now lost), which was of the same kind, but had only three escutcheons, belonged to the same series and was of about the same date. It will be observed that in this group there is next to nothing that we can describe as a contribution from ' Celtic ' art. It is true that one of the Kingston bowls bears on the print a very pretty triskele (fig. 7, 2) drawn with the native feeling for curvilinear design ; but this, after all, both in pattern and in the technical quality of the enamel, is not much of an advance on some of the enamelled disc-brooches bearing triskele designs that were made by Romano-British enamellers. You can see this same design, further developed, on the enamels of the newly discovered bowl from Stoke Golding in Leicestershire.

II. The second, or Ultimate La Tène, group of hanging-bowls (in this series with enamelled escutcheons) introduces us to craftsmen who were still resolutely Celtic and had no sympathy with Roman and contemporary continental design. The bowl from Barlaston in Staffordshire is the earliest and the most important of the vessels that are left to us from these workshops. In form it is of the simple Irchester type with in-turned rim, but it is only an imitation of the Irchester

kind of bowl, because it is made of cast, not beaten, bronze.[23] It has a flat, wide foot-ring and an ornamental strip, and three large, clumsy escutcheons (pl. v, 1) bearing a rather limp, bedraggled curvilinear swastika, set off against a field of red enamel, with a coarse and badly fired piece of mosaic inlay at the centre (fig. 4, B). The decoration on

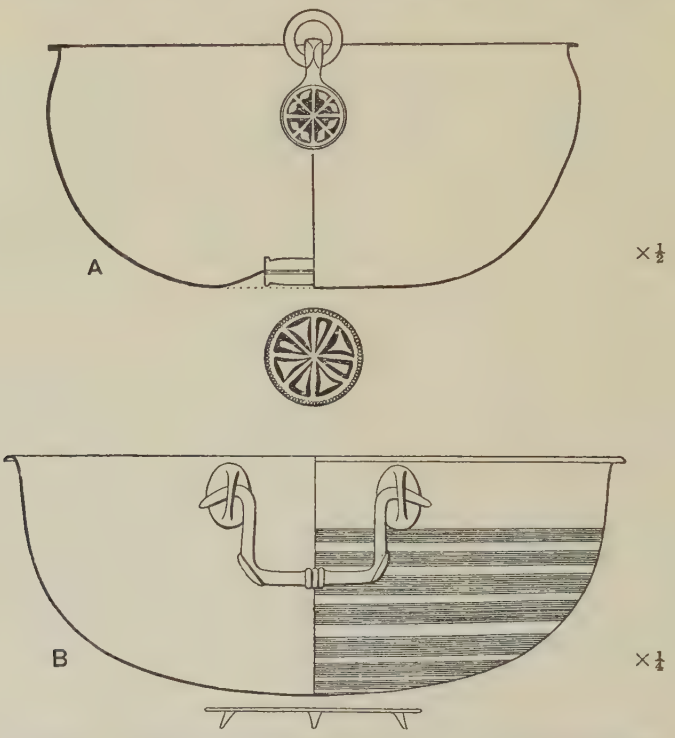


Fig. 8. BRONZE VESSELS FOUND TOGETHER, GRAVE 205, KINGSTON, KENT

the foot-ring is precisely the same as that on a piece of authentic 'Early British' enamelled metalwork, a terret from Bapchild in Kent (pl. v, 3), and technically the enamels of the Barlaston bowl belong to the Celtic school. Just the same sort of work can be seen on some of the Romano–British trumpet-brooches (pl. v, 2); it is distinguished by soft and heavy, thick-line, curvilinear patterns that are not in the least like the thin-line chisel-finished designs of the normal provincial Roman schools.

[23] On the difficult process of making these bowls see A. Götze, *Die altthuringische Funde von Weimar*. Berlin, 1912, p. 19.

Three escutcheons and a print from a bowl, that was presumably found in Northumberland, give us another example, and I illustrate one of them (fig. 4, A). They all contain the same design, a miserable burlesque of a triskele, but the enamel fields in these plaques show not only mosaic inlay (hopelessly bungled), but also some creditable 'spotting' (*i.e.*, inlaid spots of another coloured enamel, introduced directly and without the employment of metal cloisons or cells). Both these tricks, spotting and mosaic, are due to Roman influence; we do not find them used in the Brigantian work represented by the trumpet-brooches and the dragon-brooches, and I imagine that our 'Ultimate La Tène' bowls represent the continuation of the native enamel-work of the north, some time after the break-up of the Brigantian schools,[24] at a period when the northern craftsman had become familiar with fashionable enamel-work and could attempt to imitate its most striking features. Nevertheless I cannot believe that the Barlaston bowl and the Northumberland escutcheons are much later than about A.D. 300.

An escutcheon from Utne in Norway (pl. v, 4), no doubt stolen from this country, shows us a simple and handsome swastika that furnishes us with yet another example of this 'Ultimate La Tène' enamel-work. There is also an escutcheon from Barrington in Cambridgeshire to be noticed (fig. 7, 4); it is to a certain extent a compromise between the northern thick-line and the Roman thin-line work, but the design, a flaccid, ill-drawn swastika, is unmistakably in the spirit of the school to which I am now inviting your attention.

III. The contrast between this work and the products of the school that produced the bowls with 'Developed Trumpet Pattern' escutcheons is very striking. One of these bowls, that from Lowbury camp in Berkshire, has a design on its escutcheons showing the development of the triskele, an antique motive, under the influence of the trumpet-pattern style (fig. 7, 5), but in my opinion the work of the new school is primarily concerned with modifications of late Roman pelta-trumpet patterns, like that which we noticed in connexion with the Lullingstone bowl. These patterns, however, were transformed with all the cunning and grace of which British art was master, and we have certainly travelled a long way from the original sources when we

[24] Probably about A.D. 150–60. On this see Mr R. G. Collingwood, *Archaeologia*, 1930, LXXX, 57.

come to such beautiful pieces of work as the escutcheons of the Winchester bowl (pl. VI, 1 and 2) or the escutcheons that are to be seen in the Victoria and Albert Museum (pl. VI, 3 and 4). You will notice that the line-drawing of the Lullingstone escutcheon has disappeared, and that metal fields are cleverly introduced as a part of the pattern; this, I am inclined to think, marks the final development in the trumpet-pattern series. But before this is attained, a great many

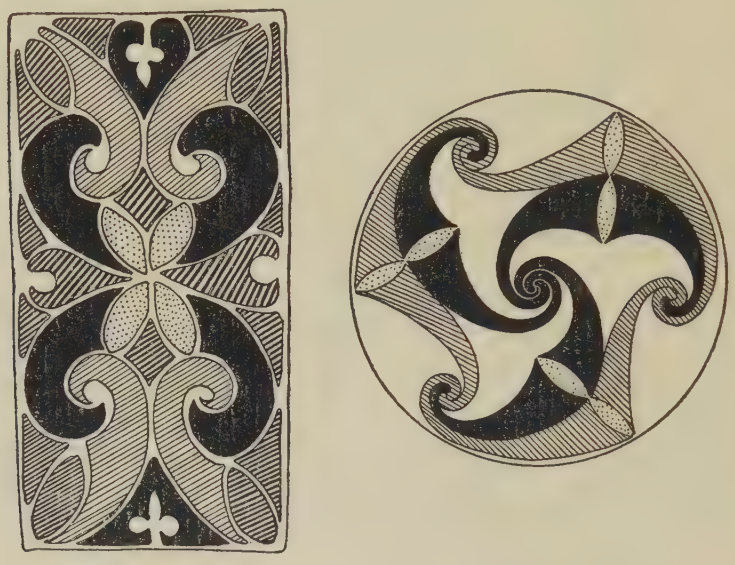
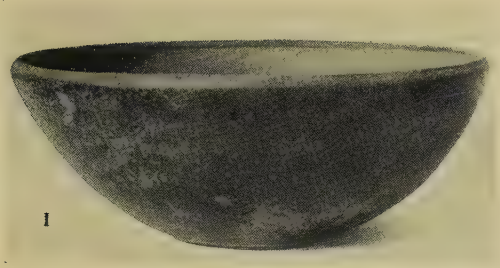


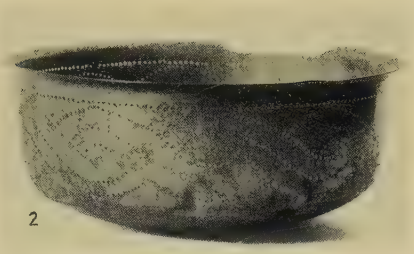
FIG. 9. ORNAMENT FROM ENAMELLED PLAQUE (left) ADAPTED FROM CIRCLE (right)

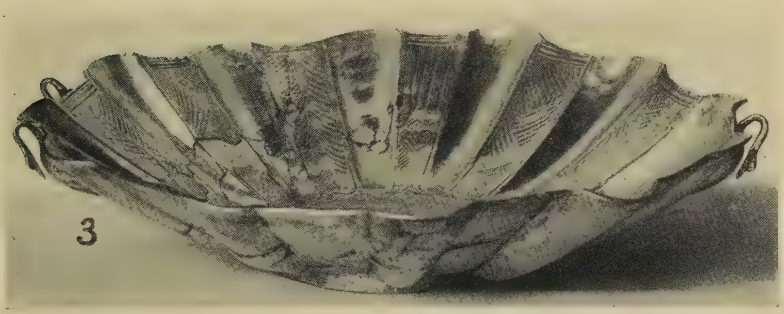
escutcheons had been made that are drawn in line only (fig. 10, A). Some of these (*e.g.*, Chesterton-on-Fosseway) are filled in with various coloured enamels, and some (*e.g.*, Oving) show the 'spotting' that we have already noticed as a Roman trick.

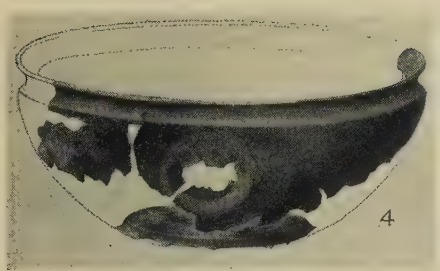
We do, in fact, see a very curious blending of ornaments and enamel-styles at about the time of the development of the trumpet-pattern; thus in the Chesterton-on-Fosseway group the print is a piece of thick-line enamelling and shows a form of the chain-pattern that we have already seen on the foot-ring of the Barlaston bowl; but the escutcheons are very creditable attempts at sophisticated thin-line work with trumpet-pattern. Again, in a Derbyshire barrow we find a trumpet-pattern escutcheon of considerable elegance accompanied

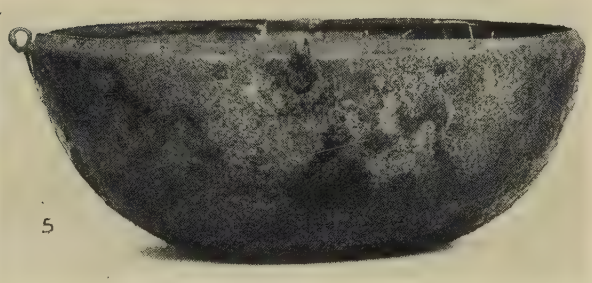
PLATE I











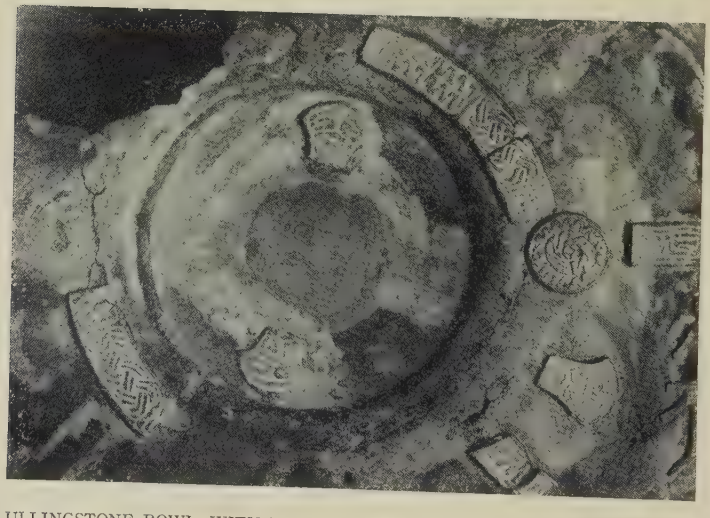
1–2. BOWL AND STRAINER FROM IRCHESTER, NORTHANTS. Diameter of bowl 11.5 inches. *Northampton Museum*
3. SILVER VESSEL FROM TRAPRAIN LAW, HADDINGTONSHIRE. Diameter 12 inches. *National Museum, Edinburgh*
4. BOWL FROM GRIND LOW, DERBYSHIRE. Diameter about 7 inches. *From a drawing in Sheffield Museum*
5. BOWL FROM SLEAFORD, LINCOLNSHIRE. Diameter 12 inches. *British Museum*

facing p. 176

PLATE II

1. BOWL FROM CHESSEL DOWN, ISLE OF WIGHT. Diameter 8.3 inches. *British Museum*
2. BOWL FROM SKOMROK, NORWAY. Diameter 18.3 inches. *Oslo Museum*

BOWL FROM FAVERSHAM, KENT, WITH DETAIL OF BASE. Diameter 7¼ inches. *British Museum*



THE LULLINGSTONE BOWL, WITH DETAIL BELOW. Diameter 10 inches. *British Museum*

PLATE V

1. ESCUTCHEONS AND FOOT-RING OF BOWL FROM BARLASTON, STAFFS. Slightly over $\frac{1}{2}$
2. ROMANO-BRITISH 'TRUMPET' BROOCH FROM CHEPSTOW, MON. Length 2.5 inches
3. LATE LA TÈNE TERRET FROM BAPCHILD, KENT. Length 3.3 inches
4. ESCUTCHEON FROM UTNE, NORWAY. Slightly reduced
5. PRINT AND ESCUTCHEON FROM FAVERSHAM, KENT. $\frac{3}{2}$

British Museum

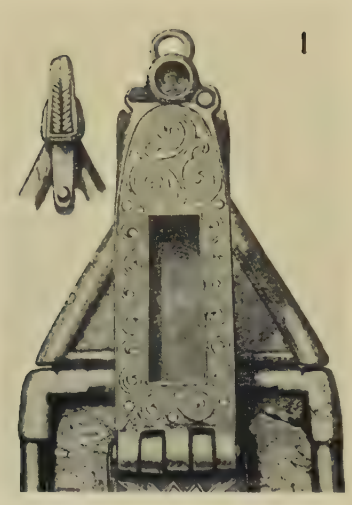
1–2. ESCUTCHEON AND PRINT OF THE WINCHESTER BOWL. *British Museum*
3. ESCUTCHEON FROM HITCHIN, HERTS. $\frac{1}{1}$ *Victoria and Albert Museum*
4. ESCUTCHEON FROM AN UNKNOWN PLACE. $\frac{1}{1}$ *Victoria and Albert Museum*

PLATE VII

1

2

1. ENAMELLED CUP FROM BRAUGHING, HERTS. Height, 2.2. inches. *British Museum*
2. THE WINCHESTER BOWL. Diameter 11.1 inches (for details see plate VI, 1–2). *British Museum*



1. DETAIL OF END VIEW, MONYMUSK RELIQUARY
2. ENAMELLED ORNAMENT FROM MIDDLETON MOOR, DERBYSHIRE. Length 1.5 inches. *Sheffield Museum*
3. ESCUTCHEON OF 'BUDDHA' BUCKET, FROM OSEBERG SHIP. $\frac{1}{1}$ *Oslo Museum*
4. ESCUTCHEON OF BOWL FROM HOPREKSTAD, NORWAY. $\frac{1}{1}$ *Bergen Museum*

by a piece of enamel-work (pl. VIII, 2)—not, of course, necessarily of the same date—that shows a very interesting ' thick-line ' experiment with the developed ' metal field ' trumpet-pattern. This probably means that the thin-line work and the new pattern travelled from Kent or Wessex northwards in the early 6th century, and revolutionized the work of the craftsmen of the ' Ultimate La Tène ' school. I regard the Derbyshire piece, which has an asymmetrical pattern on a red field and is unintelligently brightened by patches of yellow enamel, as north midland work of the 6th century.

When we look at the escutcheons of the Winchester bowl, we feel, I think, that no one but a Celt could have made these designs so beautiful, and could have drawn them with such ingenuity and delicacy ; it is also well known that they became eventually the stock-in-trade of the Celtic illuminator, and confront us again and again in the pages of Celtic manuscripts. Yet when these designs first meet us in metalwork, that is to say in the bowl-escutcheons, they do not seem to me to represent a renaissance of an ancient Celtic art. On the contrary I regard them as an independent Celtic experiment with an entirely new design-complex, their Celtic quality being largely the genius that inspires the perfected patterns. If you want to study the fate of the antique Celtic art in late Roman and sub-Roman times you must turn back to the art which I have rather clumsily called ' Ultimate La Tène '. In my view this is a phenomenon of the period A.D. 300–400 ; it produced embossed disc-brooches, the Barlaston bowls and its fellows, and the bird-ended spiral enamels of the heater-shaped Faversham escutcheon ; it is an art that also survives on certain latchets in Ireland, and perhaps survives in that country and in Scotland until the 5th or 6th centuries, being represented by certain hand-pins and early penannular brooches. It is almost completely preoccupied with swastika and triskele designs, and it contains no elements not known in the 2nd century or before ; every manifestation of it is simply the logical outcome of the faltering and uncertain development of native Celtic art that archaeologists have long ago traced as far forward as the 2nd century. But here, likewise, I do not talk about a renaissance ; for nothing was reborn. We do not get back the beautiful foliate scroll of authentic La Tène art, or the billowing, sinuous eccentricity of the early masterpieces. When you look at the wretched leggy triskeles and swastikas, you can see for yourself that the old art is dying. That is why I describe it as ' Ultimate ' ; because it is the end.

But this does not mean, as I have already observed, that Celtic art,

in the sense of a national genius, is likewise extinguished. On the contrary, it lives with renewed vigour just because it was strong enough to abandon the antique La Tène formulae, and to occupy itself henceforward with the fascinating new trumpet-patterns, and the interlace, and animal composition that was borrowed from late Roman art. It is of this stuff, fresh and vigorous, that the Book of Durrow is born ; it is of this stuff that we in England get our Winchester bowl.

To convince yourself that our enamellers were by this time really occupied with new motives, look at the remarkable bowl-escutcheon

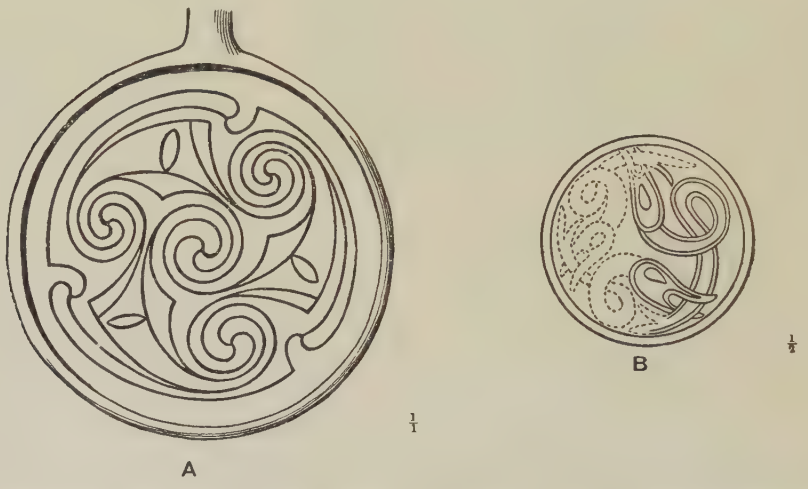


FIG. 10. ENAMELLED ESCUTCHEONS FROM (A) MIDDLETON MOOR (B) BENTY GRANGE, DERBYSHIRE

(silvered bronze and yellow enamel) that was found at Benty Grange in Derbyshire (fig. 10, B). It is a little roundel entirely filled by a design of animals biting each others' tails. This is probably a development of the animal-frieze that we saw on one of the prints of the early Faversham bowl (fig. 7, 1), and it is a design that we see further developed in the famous Celtic manuscripts. Originally it was not Celtic ; now it has become characteristically so.

With this escutcheon and with the Winchester bowl we reach a date that must be in the neighbourhood of about A.D. 600, and we come to the end of the bowl series in England. This was the time that the Saxons, who ever since they had been in England had stolen British enamel-work with remorseless diligence, were becoming masters of luckless Wessex, and it may have been a result of their campaigns against

south-central and western England that the native enamellers were driven into exile. Thus it comes about that we have nothing more to show from this country, whereas enamelling of the ' bowl-escutcheon ' kind now appears in the Celtic refuge-lands and confronts us, for example, in that admirable (late 7th or 8th century) work of art, the Monymusk reliquary (pl. VIII, 1).

The part played by Ireland in the early history of enamel-work had been hitherto a small one. You do see it stated sometimes that Ireland preserved the native Celtic arts and crafts while the Romans possessed our island, and gave them back to us when the Romans left ; but in reality there is not the slightest reason to suppose that this was so. Just what exactly are those who hold this view going to produce from Ireland in order to persuade us that there was a school of Celtic art there in the 3rd and 4th centuries so virile that it was able to influence late Roman or post-Roman Britain ? There is, of course, next to nothing. You hear a great deal about a hiatus in Celtic art in this country during the last half of the Roman period, but this is a mere crack compared with the vast and horrible gulf that confronts you in Irish archaeology during these same centuries.

This is so evident that when we remember that we can produce quite respectable antecedents here for our late Roman enamels (some of which—such as the Dover escutcheons and the Kingston and Faversham bowl series—are definitely unlike anything ever produced in Ireland at all), and when we see from the distribution map (fig. 11) that the enamel-work in question is nearly all found west of the Fosseway, as far from Ireland as possible, we see that we need not waste time discussing the matter further. The stuff is clearly British in origin.

On the other hand, one or two Irish latchets and a number of hand-pins (probably of Scottish origin) are the technical equals of some of our escutcheons, and must undoubtedly be ranked as a counterpart of British escutcheon-work at its best. But I am not inclined to date most of these antiquities earlier than the 5th century, and consider that up to the 7th century Irish enamel-work, in general, follows sorrowfully behind the British. You see this very clearly if you look at the early penannular brooches of 5th and 6th centuries, which show all manner of bungling experiments with mosaic inlay and extremely crude champlevé work. In the 7th century, however, when the Saxons had destroyed or nearly destroyed our British enamel-industry, then Ireland mothers this homeless craft and nurses it to an excellence

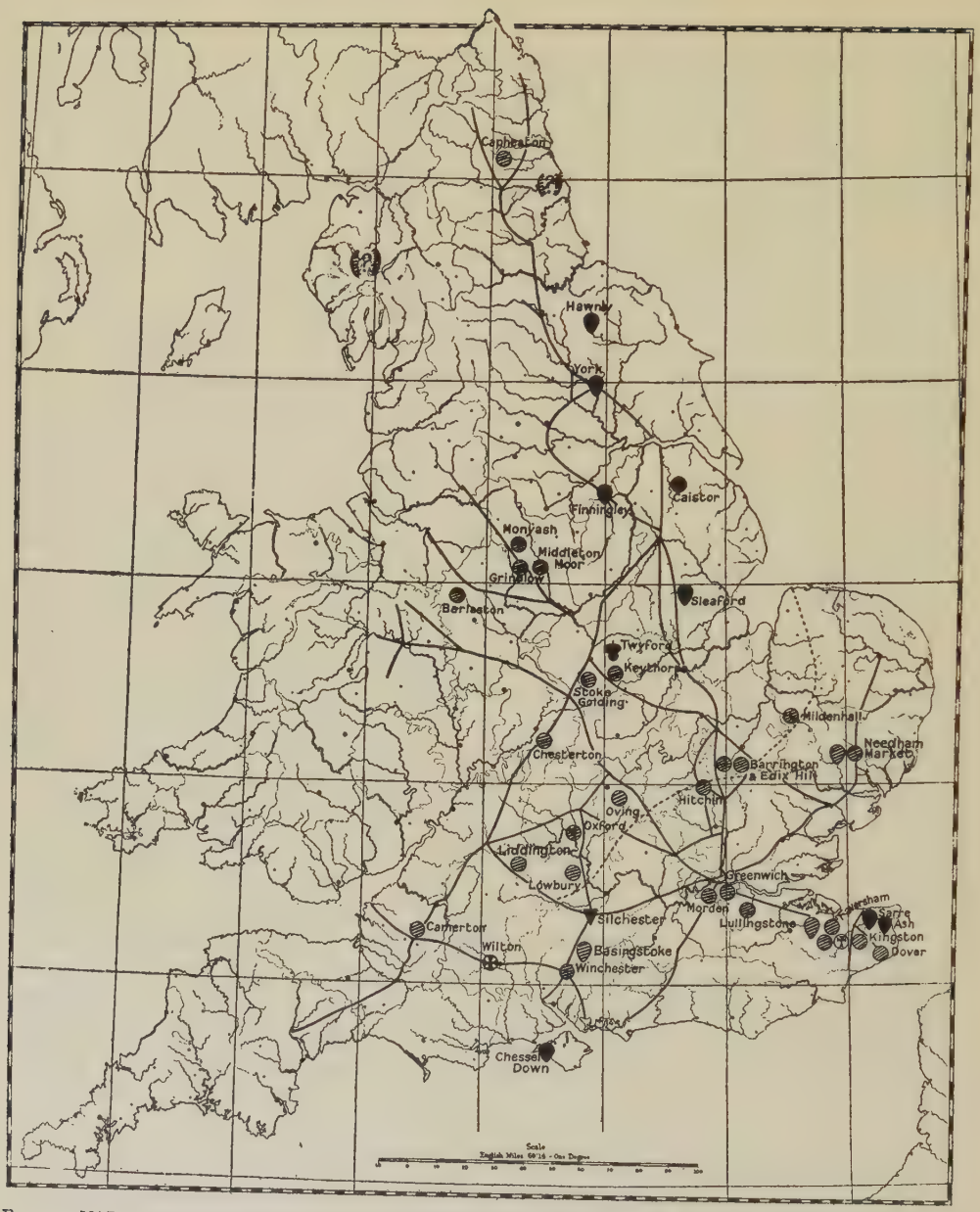


FIG. 11. MAP SHOWING DISTRIBUTION OF HANGING-BOWLS, AND THEIR RELATION TO ROMAN ROADS AND ICKNIELD WAY (dotted)

Hatched symbols represent enamelled bowls. Black symbols are unenamelled bowls. Shape of symbol represents shape of escutcheon.

that it had never hitherto approached. The mosaic-work becomes fantastically brilliant and precise, a characteristically Irish false-cloisonné technique appears and the most audacious cloisonless polychrome work ever attempted in early enamel-craft is successfully achieved. The Tara brooch, the Ardagh chalice, the enamelled weights, and the work of the ' Buddha ' bucket school, alike witness to the Irish enamellers' incomparable skill in the 8th and 9th centuries.

And now a word as to the Anglo-Saxons. I am sorry to say that I am not a believer in the high excellence of the pagan Saxon as an artist and a craftsman ; but, without seeking to defend this unworthy statement of opinion, I will merely remark here that, in my view, these Teuton invaders of Britain did not know anything about enamel-work —except that it was desirable stuff to steal. As far as I can discover, in the whole length and breadth of the lands from which the Saxons and the Angles came, there is only one object of antiquity which suggests that the inhabitants, at the time of the migration, knew anything about cooking fluxes in a muffle—and this is a poor little nielloed brooch which I should say myself was an imported piece. Therefore, when we find a few Anglo-Saxon long and square-headed brooches of the early 6th century in the Cambridge area ornamented with some simple champlevé blobs of red enamel, we ought to ask ourselves where in the whole world did the makers of these brooches learn the enamel-craft. And the answer is that they learnt it in Britain from the British.

It is to be admitted that the Jutes (or at least some of them) may have known a little about enamel-work before they came to our shores ; yet there is precious little evidence that they did. When you remember that in the vast collection of the metal-work that is alleged to have been made by them, we can only find one or two late saucer-brooches with a wipe of red enamel on their buttons,[25] you will see how very probable it is that the ancestors of the English, whether Angles, Saxons, or Jutes, made no contribution whatever to the furtherance of the enamel-industry that they found flourishing in this country.[26]

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[25] I omit the Ash brooch (a jewelled disc-brooch with an enamelled centre), as the enamel-work it bears is fine Frankish cloisonné.

[26] I do not want, however, to exclude the possibility that our enamellers in the south were to some extent influenced by the sub-Roman enamel-school of the Rhineland ; it seems to me that the ' fleur-de-lys ' escutcheons of the Kingston bowl (fig. 8) may owe something to this influence.

Yet the hanging-bowls of which I have been writing, are normally called ' Saxon Bowls '. It cannot be denied that many of them were found in pagan Saxon graves, and there is, in fact, only one little scrap of enamel-work of the escutcheon sort about which we can say for certain that it was *not* found in the possession of a dead Saxon, namely a fragment discovered close to Liddington Castle, a Wiltshire camp. Of course, there is doubt in many instances ; we could not prove that the Chesterton-on-Fosseway bowl, or the Wilton bowl, or about 11 other bowls, were buried with Saxons, but we can say this was so, fairly confidently, of about 15 bowls, or parts of bowls. So it is not without reason that they have been called ' Saxon ' and are supposed to have been made either by the Saxons themselves, or by British craftsmen under Saxon direction.

It is significant, however, that we do not always find a complete bowl in these Saxon graves ; sometimes we find only an escutcheon or two, and in one instance, at the late cemetery of Camerton in Somerset, the escutcheons were clearly preserved as trinkets and worn by a child. This suggests ' loot ' at once. But let us consider also the very important discovery of the Winchester bowl (pl. VII, 2). Everyone will agree that this lovely vessel is in magnificent condition ; it must have been, in fact, almost new when it was buried. And it was found in the grave of a 7th century Saxon (he is dated by his dagger-pommel) who was buried in an earthwork outside Winchester. He could not have been at home, or near home, when he died ; there is no Saxon cemetery, no settlement, within miles, so that he was plainly on a campaign. Which then is more likely—that he had this bowl made in order to carry it about, new and resplendent, to his battles—or that he had just stolen it, as I believe, from the still British town of Winchester?

I do not propose to say more on this subject, because, of course, I cannot prove my case ; I can only repeat my conviction that all bowls, or parts of bowls, found in Teutonic graves got there as loot, and I would observe that this is no more astonishing than the admitted fact that the very numerous pieces of Irish metal-work found in Norway were not made by the men who last owned them. But what the reader may want to know, here and now, is whether the dates of these graves affect the chronology that I have suggested for the bowls. The answer is that they do not.

The most interesting of the graves in this connexion are the two burials in the Kingston cemetery (graves 76, 205) that contained the very early (as I think) ' Romanizing ' bowls, one of which is illustrated

here (fig. 8, A). The bowl that is not illustrated was found at the foot of a coffin that contained, beside the skeleton, an iron knife and dagger with a shell-encrusted silver pommel, and a simple bronze buckle ; the bowl itself is worn and patched in more than one place, so that it was very old when it was buried. The second bowl is much better preserved, and I cannot pretend that it is necessarily much older than the burial in which it was found ; it was found with a female skeleton, the beautiful Kingston brooch, a pair of one-piece silver brooches, a gold bracteate, an iron key, a pottery vessel and a glass cup, and the bowl itself lay inside a handled bronze pan of Roman type with a trivet stand (fig. 8, B). If you believe that the Kingston brooch was made in the 7th century I cannot hope there is any chance of convincing you that the hanging-bowl was made about A.D. 400. But if you believe, as I do, that the brooch was made about A.D. 500, you will see that there is no particular reason why the bowl should not be as early as I say. We cannot start a discussion here as to the date of the Kingston brooch ; I merely beg the reader to fix his attention on those one-piece silver brooches, and to tell me where else one-piece silver brooches are found at this late day. He will answer in the Sackrau finds of the 4th century, and I am not going to believe they are accidental 1st century survivals, both at Kingston in Kent and at Sackrau in Germany ; indeed, I myself think that they are quite sufficient in themselves to show that this famous Kentish grave is not much later than A.D. 500. As to the other graves in which hanging-bowls have been found, I have very little to say, except that what I take to be a rather late form of Saxon shield-boss was borne by the warrior who was buried with the Lowbury bowl, and that the graves containing the trumpet-pattern enamels seem, so far as we can tell at all, to be late (6th or 7th century).

To make an end of this matter, I believe that the hanging-bowls are from first to last British, and that the Saxons had no hand whatever in their manufacture. I think, moreover, that in origin these bowls are really Romano–British ; that many of them had been made and were in use before the Romans left this country ; that others were made after the Romans had gone, and belong to the almost unknown archaeology of the Arthurian period. The only subject on which, very regretfully, I find I have no opinion at all, is the problem of the use to which they were put. I take comfort, however, in the reflection that there does not seem to be any particular anxiety about the uses of the hanging-bowls found in Roman treasures, and I am content to accept our native hanging-bowls just as I accept the Traprain Law hanging-dish—or the

little single-ring, jewelled cups (with interior prints) in the Szilágy–Somlyió treasure—without a vain struggle to decide what the owners kept therein.[27]

I should like to say as a final word that this subject of the hanging-bowls, though in the broader aspect of their position in the history of Celtic art, is shortly to be discussed by my friend Mr E. T. Leeds. I think that on the general matter of the early (Romano–British) date of some of them Mr Leeds will endorse what I say here, but he tells me that he does not agree in certain particulars, and especially with regard to some observations that I have made about the development of Celtic art. I am not surprised ; indeed, when we reflect upon our lamentable ignorance of this subject, I think a divergence of opinion is not only natural, but healthy and desirable. So it only remains for me to admit honestly that Mr Leeds knows much more about Celtic art than I do, and, having done what I can in the rôle of advance-agent, I may without further remark safely leave the rest in his competent hands.

[27] See Mr Cowen's remarks, *op. cit.* p. 332ff.

A Chronological Table of Prehistory

by Miles Burkitt and V. Gordon Childe

WHEN the Editor of Antiquity approached the authors and suggested that some of his readers would welcome a visual table showing the occurrence and sequence of the different prehistoric cultures, the matter did not seem to be one of outstanding difficulty. When the time came, however, to produce the work, it was found to be quite otherwise. Perhaps the ideal method would have been to prepare a series of gigantic distribution maps of the area to be covered (Europe, the Mediterranean Basin and adjacent regions) during the different prehistoric periods. But the preparation and publication of such maps on a scale large enough to be at all helpful would have presented insuperable difficulties. The more diagrammatic method which has been adopted divides up the map into several geographical areas which will be found heading the various columns of the table. These areas have been chosen and arranged as conveniently as possible in the light of the general distribution of the early and later prehistoric cultures.

It must always be remembered, however, that the spread of a culture from its area of origin corresponds to the ever-widening rings formed by a stone which is cast into a pond—its influence lessens as we get farther from the centre of diffusion. It is not easy to represent this lessening influence diagrammatically. Of course when the industries of a culture have spread widely over a neighbouring area, its name appears in the appropriate column of the table. Where, however, they are only very rarely found, perhaps as the last, faintest ripple of the circles, or where, as with the Solutrean culture in Spain south of the Pyrenees, they are only present in a small corner of the area adjacent to another thickly sprinkled area (France) whence they have clearly percolated, it would have presented an erroneous picture to have cited the culture-name.

A further difficulty presented itself when referring to the literature, namely the somewhat loose use by some authors of the prehistoric

culture-names. For example, industries have been cited as Magdalenian because stratigraphically they were found later than Solutrean industries. It is now recognized that in many districts the Aurignacian culture continued to develop contemporaneously with, but quite independently of, the great Magdalenian culture which was essentially a French production. Care and judgment, therefore, have to be exercised in utilizing the literature of the subject—especially when this is not well illustrated.

It was found impracticable to give an absolute chronology much before 2000 B.C. In general terms, however, the reader may imagine that the Upper Palaeolithic period came to an end some 8,000 years ago and that its duration was in the neighbourhood of 10,000 years. Any attempt at absolute dating before the close of the Mousterian period is so hypothetical as to be useless. Nevertheless the antiquity of the human species on this globe may quite likely have extended into half a million years. Some prehistorians would call this a conservative estimate.

While the correlation of the several Palaeolithic cultures depends largely on geological considerations, and particularly on the succession of glaciations or correlative pluvials, it has been found inadvisable in view of the extreme uncertainty surrounding the subject at the moment to attempt to introduce into our table any detailed scheme of glacial chronology. In general it may be said that most of the Upper Palaeolithic period is anterior to Würm II; that most of the Mousterian is contemporary with Würm I; that the Acheulean can be correlated with the Riss-Würm interglacial; that the Chellean can be correlated with the next earlier interglacial stage (Mindel-Riss); and lastly that the Pre-Chellean culture seems to be definitely Pre-Mindel in age.

Though marked climatic and even geological changes can be detected in post-palaeolithic times, these do not as yet provide an equally delicate or comprehensive framework for the establishment of correlations between the several regions covered in this table. At the same time the variety of cultures increases bewilderingly. On the one hand the spread of forests and deserts caused the isolation of small groups which developed specialized cultures; on the other, when man learned to regularize his food-supply by the domestication of animals and the cultivation of grains, population multiplied rapidly and, being sedentary, gave rise to a multiplicity of distinct cultures. Though interrelations can certainly be detected between the various centres in these times,

they are in most cases so vague as to admit of the most divergent interpretations.

It seems highly probable that both food-production and then organized industry and commerce began first in Egypt or Mesopotamia or in their vicinity, and spread thence in very slow ripples so that Britain or Denmark might lag 2,000 or more years behind. About 3000 B.C. monuments dated by inscriptions begin both in Egypt and Mesopotamia, thus providing the framework of a historic chronology in terms of solar years. Yet even in those countries most dates for another whole millennium are disputed, so that even the correlations advanced here between early Egyptian and Mesopotamian cultures are speculative and not universally accepted. None the less one of the authors has ventured to set beside them some of the strictly prehistoric cultures of Europe and Hither Asia.

Owing to her regular contact with Egypt, Crete and rather later the rest of Greece can be brought into relation with the Egyptian record two millennia before written history begins there. Unambiguous synchronisms between the East Mediterranean and regions north of the Alps do not go back before 1200 B.C. Yet by that time a whole series of local cultures had been evolved in eastern, northern and western Europe. These can be arranged in a definite sequence, a relative chronology, in many areas, particularly those covered by columns 13–21, with a high degree of probability ; and a number of very plausible synchronisms allow the several relative chronologies established for regions as far apart as Britain and south Russia to be coordinated into a coherent system. The position of the various phases in this system in relation to dated epochs in Egyptian and Mesopotamian history and so to our calendar reckoning is (it must again be insisted) much disputed. As to the beginning of the Bronze Age in Central Europe, for instance, opinions differ to the extent of 850 years, and in the case of the Neolithic period the range is much wider still. In the table a ' short chronology ' has been adopted, but it embodies the views of only one group of writers. Hubert Schmidt for example would put most of the megalithic culture in Western Europe before 3000 B.C., and so parallel to the predynastic period in Egypt. Menghin on the other hand obtains a rather similar result by reducing the length of the predynastic period to 500 years. And even after 1200 B.C. there are possible discrepancies of at least a century plus or minus in nearly every column.

SYSTEM OF NUMBERING THE NOTES

1. ICE AGES
2. 'EOLITHIC' PERIOD
3. LOWER PALAEOLITHIC PERIOD
4. EARLIEST FLAKE-INDUSTRIES
5. MIDDLE PALAEOLITHIC PERIOD
6. UPPER PALAEOLITHIC PERIOD
7. MESOLITHIC PERIOD
7A. FOSSIL MAN
8. NEOLITHIC PERIOD
9. COPPER AND BRONZE AGES
10. IRON AGE
11. HALLSTATT PERIOD
12. LA TÈNE PERIOD
13. MESOPOTAMIA
14. EGYPT
15. AEGEAN CULTURES
16. BEAKERS
17. MEGALITHIC TOMBS

1. ICE AGES

The Great Ice Age was contemporary with Quaternary or Pleistocene times. While it lasted long glaciers stretched out from all the mountainous lands of the northern hemisphere, while in the more northern latitudes there was a veritable ice-sheet over large areas. Nearer the equator pluvial periods took the place of the extremes of glaciation. There seem to have been four periods of glacial maxima, which have been named after four small rivers of southern Germany :— Gunz, Mindel, Riss and Würm. Between each of these came a period when the ice disappeared. The last of them, the Würm glaciation, can be divided into two periods of extreme cold, Würm I and Würm II,† there having been a recession of the ice in between. The cause of the glacial epoch is a much debated and undecided question.

2. EOLITHIC PERIOD

(*Eos*, dawn : *lithos*, stone).* A pre-palaeolithic stage in man's evolution. The evidence for its existence is based on the finding in Tertiary deposits of chipped flints, the chipping of which is accepted by the majority of prehistorians as being the work, not of natural forces but of some ' tool-making animal ', presumably most primitive man.

The term ' eolith ' is often incorrectly used in a contemptuous way to indicate a stone fractured by nature but vaguely recalling in shape some recognized type of tool.

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† Here used throughout as a synonym for the stage often called Bühl.

* The finds indicated by an asterisk in columns 11, 12 and 14 are not accepted as human artifacts by many prehistorians ; those from the Ipswich district in column 15 are accepted by the large majority.

3. Lower Palaeolithic Period

The Lower Palaeolithic Period (succeeding the Eolithic Period) lasted during the earlier two-thirds of Quaternary times. Though including the Clactonian and some of the Levalloisean cultures this was, above all, the period of the coup-de-poing in Western Europe. The industries are found in old river-gravels, brick-earths, early loess

Distribution of the Chellean and Acheulean /// cultures, and of the Pre-Mousterian flake-industries \\\\ according to available data.

deposits, etc., and among these an evolution can be demonstrated on stratigraphical grounds to which two main names, derived from localities where the tools were first found, have been given: the Chellean from Chelles on the river Marne, and the Acheulean from St. Acheul, a suburb of Amiens. Both these can be again subdivided, the qualifying terms generally used being Lower, Middle and Upper or Late. The terms Pre-Chellean and Old Chellean are sometimes used to designate the very early Chellean, and in Belgium certain industries of this date have been called Strepyan. A very late and

somewhat peculiar Acheulean is often named La Micoque after a small rock-shelter in the Dordogne. A rather special Late Lower Palaeolithic occurring in North Africa has sometimes been named, after a type-station, S'baïkian.

4. Earliest Flake Industries

Industries, the tools of which are made from flakes, are the special feature of the Clactonian and Levalloisean cultures. In the case of the former culture the flakes are rough and show an unfacetted striking platform which, as a rule, is inclined at a high angle to the main flake-surface. The Levalloisean flake-tools, however, are often well made : they show much primary working on the upper surface and sometimes secondary working round the edge, the platform is at right-angles to the main flake-surface and it is very often carefully prepared by facetting. The process of tool-making by the technique of the tortoise-core and Levallois flake first makes its appearance at this time. It consists in the preparation of the upper surface of the tool while it is still a part of the core and before it is finally struck off by a single blow; so that only a little secondary working round the edge is then necessary to complete the flake-tool. These flake industries seem to be quite distinct from the coup-de-poing industries, although often found associated and in large measure contemporary with them in Western Europe.

If the original makers of these Pre-Mousterian flake industries differentiated from the same stock as Lower Palaeolithic man the differentiation must have taken place in some area outside Western Europe, where we only know the tools in a completely developed state and can trace in them no evolution from any other tool-form. The relationship between the Proto-Mousterian in Central Europe and these flake cultures is doubtless close, probably a direct evolution. A rough industry first recognized in Belgium and called Mesvinian belongs to this group of cultures.

5. Middle Palaeolithic Period

The Middle Palaeolithic Period embraces only one culture, the Mousterian, so named after a cave at Le Moustier in the Dordogne region, southern France. The true Mousterian industries are characterized by flake-tools such as side-scrapers, points and Levallois flakes. The secondary working of the tools most often shows step-chipping. To be distinguished from the flake industries which are contemporary

with the Lower Palaeolithic coup-de-poing cultures, they are found associated with an arctic fauna and were made by men of the NEANDERTHAL race. In certain areas such as Central Europe Mousterian-like industries which appear to be of somewhat earlier date do occur, but these are usually classed as Pre- or Proto-Mousterian. Some small,

Distribution of the Mousterian |||| *and Aterian* = *cultures, according to available data.*

triangular, coups-de-poing survive into early Mousterian times from the previous Acheulean culture ; they are known as the COMBE-CAPELLE type of coup-de-poing. In North Africa a rather peculiar Mousterian is called ATÉRIAN ; among other tool-types there a sort of tanged Mousterian point is prominent.

6. UPPER PALAEOLITHIC PERIOD

It was with the beginning of Upper Palaeolithic times that *Homo Sapiens* crossed from North Africa into Western Europe. There seem to have been, from the beginning, several variations of a hypothetical,

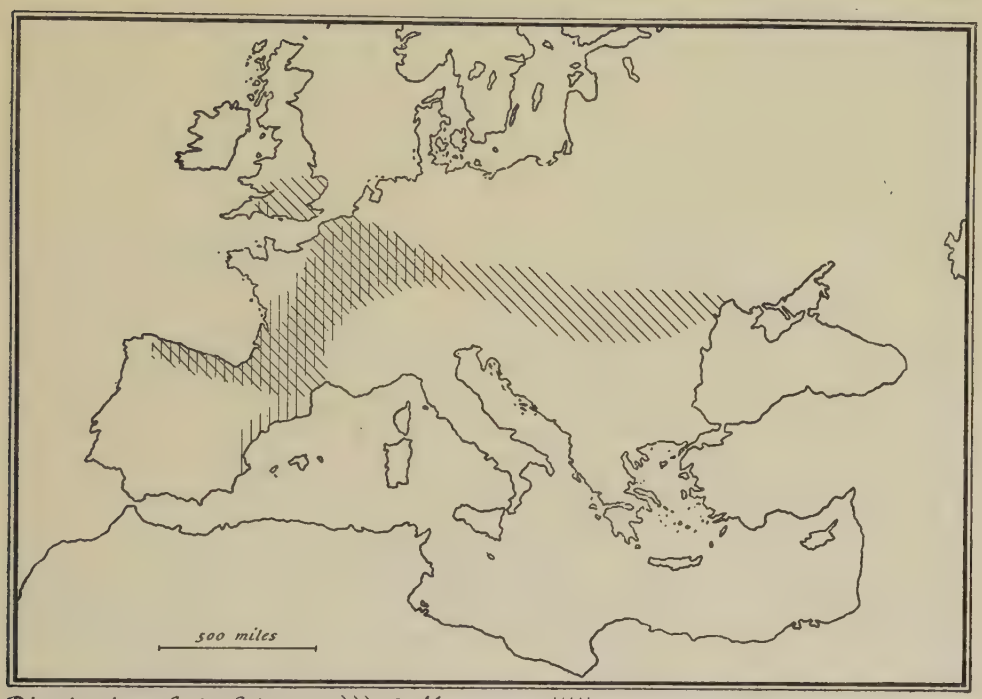
basal, physical type which have been named CRO-MAGNON, COMBE-CAPELLE and GRIMALDI after localities where human remains have been unearthed. The basal culture of these NEANTHROPIC people was the AURIGNACIAN, so-named after a site now destroyed near Aurignac in South France. In France the Aurignacian culture is divisible into

Distribution of the Aurignacian //// culture, according to available data.
In N. Africa & in most of the Spanish peninsula the culture marked as Aurignacian is actually of the Capsian variety.

five stages: the AUDI, the CHÂTELPERRON, the MIDDLE AURIGNACIAN, the GRAVETTE and the FONT ROBERT stages. The industries found in each of these stages include characteristic tools.

A little later there developed—probably in North Hungary—a new culture called the SOLUTREAN after a type-site in Eastern France. The industries show new types of tools, particularly the laurel-leaf spear-head, often made by a new technique of pressure flaking. The Solutreans invaded parts of Western Europe and dominated the Aurignacians. Three stages of their culture, known as Proto–Solutrean, Typical Solutrean and Late Solutrean, can be distinguished.

Later the culture became extinct or was merged in the rise of the MAGDALENIAN culture of France, which seems largely to have had its origin in a renaissance of the earlier Aurignacian. The Magdalenians were, for the most part, the authors of the wonderful works of art which are found in the caves and rock-shelter homes. In many areas, however,



Distribution of the Solutrean \\\\ *& Magdalenian* ||||| *cultures, according to available data.*

the Aurignacian culture was not disturbed by the Solutreans and Magdalenians, and in consequence it continued to develop independently of them. Various names, more particularly CRESWELLIAN and GRIMALDIAN, have been given to this 'developed' Aurignacian, which was contemporary with but untouched by the Solutrean and Magdalenian of France. In North Africa the Upper Palaeolithic industries are known as CAPSIAN (Early and Late, or GETULIAN). In the Nile Valley some rather peculiar industries, probably allied to the Aurignacian, are called SÉBILIAN. Sudden climatic changes probably caused the final break-up of the Upper Palaeolithic Civilization.

7. Mesolithic Period

The term Mesolithic is used to designate a number of cultures which flourished during that rather dim period between the end of Upper Palaeolithic times and the appearance of the true Neolithic civilization. It embraces an earlier group of cultures : the Azilian (typical stag's antler harpoon and painted pebbles), Tardenoisian (pigmy geometric tools), Maglemosean (typical harpoon) later developing into the Kunda culture, Chwalibogowician = Swiderian (pigmy tools), and also a rather later group comprising the Campignian (typical axe), the Ertebølle, or Kitchen Midden, and Nøstvet cultures of the Baltic area which are really also Campignian, and the Asturian (typical pick). The Mesolithic cultures in Europe seem to have had two main sources of origin: (1) the final developments of the native Capsian or Aurignacian cultures by way of such industries as the Grimaldian and Creswellian and (2) the Campignian culture which seems to have penetrated into Europe from the east. In the hinterland of Scandinavia, etc., the Mesolithic cultures of the Baltic area seem to have survived for a long time. This late development is called the Arctic culture, of which there were several local facies. In Palestine Mesolithic industries are called Natufian. There agriculture was practised but connexions seem mainly to have been with the north, not with Egypt. In date the Natufian is earlier than Middle Pre-dynastic times.

7a. Fossil Man

Well authenticated definitely dated finds of prehistoric human remains are not numerous. The following are the more important discoveries arranged under chronological headings :—

PRE-MOUSTERIAN discoveries not belonging to the Coup de Poing Culture	{	Piltdown Man (England) Pithecanthropus (Java) Sinanthropus (China) Ehringsdorf (Germany) Taubach (Germany) Heidelberg (Germany)
COUP DE POING MAKERS	..	None yet found
MOUSTERIAN MAN	{	Neanderthal (Germany) Spy (Belgium) Chapelle aux Saints (France) La Quina (France) Gibraltar La Naulette (Belgium) Krapina (Yugo-Slavia) La Ferrassie (France) Galilee and Mt. Carmel (Palestine)

AURIGNACIAN MAN	PAVILAND (Wales) CRO-MAGNON (France) COMBE CAPELLE* (France) MENTONE (France) MENTONE ('GRIMALDI INFANTS')* (France) BRNO* (Moravia)

* These remains cannot be classed as belonging to individuals of the Cro-Magnon type, but nevertheless they appear to be makers of Aurignacian industries.

SOLUTREAN MAN	LE ROÇ (France) KLAUSE (Germany)
MAGDALENIAN MAN	CHANCELADE (France) LAUGERIE BASSE (France) PLACARD (France) SORDES (France) LES HÔTEAUX (France) OBERCASSEL (Germany)
MESOLITHIC FOLK† † From this time onwards many mixed types occur.	OFNET (Bavaria) FURFOOZ (Belgium) AXPEA, near VITTORIA (Spain), etc.

8. NEOLITHIC PERIOD

The so-called Neolithic Period is generally supposed to be defined by the use of celts (axe or adze-heads) of stone with their edges sharpened by grinding. The makers of these tools were moreover generally food-producers—*i.e.*, they possessed domestic animals, cattle, sheep and swine, and/or cultivated plants (generally wheat and barley); they generally made pottery and often practised weaving too. But there are cultures, *e.g.*, the Dwelling-Place (Arctic or Comb-ware) cultures of Sweden and Finland, that, though characterized by polished stone celts and pottery, yet lack agriculture or domestic animals other than the dog. (The horse seems to have been domesticated in the Neolithic culture of South Russia and Denmark, perhaps also of Great Britain). Conversely some food-producing peoples like the pre-dynastic Egyptians did not manufacture polished stone celts. Here the term is applied to cultures without metal tools but possessing polished stone implements, pottery, agriculture, and tame food-animals, or at least two of those traits. The really essential feature of the community thus characterized is its self-sufficiency: it did not depend on external trade for any essential industrial material.

In any case it must be remembered that neolithic cultures do not begin nor end at the same time everywhere. The Maori, for instance, were in a pure neolithic stage when Captain Cook landed in New Zealand. Moreover stone celts continued to be used and very probably to be made long after the introduction of metals locally ; in Scotland, for example, they are found in Iron Age sites.

9. Copper and Bronze Ages

The discovery that certain minerals on heating with charcoal yield a substance which is fusible and malleable when hot, but, when cold, possesses the trenchant properties of stone, marks a real stage in human progress owing to the greater command over Nature which followed and also owing to economic adjustments, *viz.*, specialization of labour and the establishment of regular trade, normally involved. A new era is accordingly denoted by the regular use of implements made of cast metal. On the other hand neither objects made of native copper treated like a stone and fashioned by hammering when cold, nor yet occasional imported trinkets of metal denote the beginning of a metal age. In any case the metal ages begin at different times in different places according to their distance from the original centre of discovery, presumably in the 'Ancient East', and to their resources in ore or in commodities that could be exchanged for metal.

The use of unalloyed copper probably preceded that of bronze, an alloy of copper and tin which is easier to cast than the unalloyed copper. At the same time the use of the alloy was dependent upon the possibility of obtaining the comparatively rare element, tin, and would accordingly vary greatly with economic and geographical circumstances. The Sumerians used bronze more freely in the fourth than in the third millennium B.C., presumably owing to the depletion of the original source of tin supply or the interruption of communications. The presence or absence of tin in a collection of implements is rather an indication of the economic resources of their makers than of their age. In the index ' Copper Age ' denotes an early metal-using culture in certain regions where such a culture using unalloyed copper is succeeded by one using bronze, the fact being established by a sufficient number of analyses. In the East Mediterranean, however, the term Bronze Age is applied, in accordance with traditional usage, also to cultures where the extant analyses suggest at least a shortage of tin. It must again be insisted that it is the presence of cutting tools and

weapons of copper or bronze, not the absence of similar stone implements, that denotes a metal age.

In parts of Europe it is possible to divide the Bronze Age into three phases, Early, Middle and Late, characterized respectively by flat triangular daggers and flat or slightly flanged celts ; by rapiers and flanged or winged celts or palstaves ; and by cut-and-thrust swords, socketed celts or winged palstaves. But some of these types denote a culture (the fashion of a particular community) rather than a period of time, and they are in general only helpful at all as chronological criteria within the framework of the Central European–Scandinavian economic system.

10. Iron Age

Iron is a much commoner element than copper, to say nothing of tin. The invention of an effective process for working iron accordingly introduced an industrial revolution, in that it made metal tools cheap and accessible for all purposes. The Iron Age begins then at different times as this secret spread from the centre of discovery in Hittite Asia Minor during the 14th century B.C., reaching Southern England, for instance, first toward the sixth century. The occurrence of stray ornaments or even implements of meteoric iron in Egypt and Mesopotamia before 3000 B.C. does not denote the beginning of an iron age.

11. Hallstatt period

A settlement and rich cemetery of salt-miners at Hallstatt in Upper Austria has given its name to the cultures of the First Iron Age in Central and Western Europe. The cultures so designated differ quite widely amongst themselves, being mostly direct descendants of distinct cultures occupying the several regions during the Late Bronze Age. All, however, share certain types of sword and later of safety pin and certain tendencies in pottery ; but it is incorrect to speak of a single ' Hallstatt culture '. The similarities seem due partly to common cultural borrowings from Italy and partly to the relationship between the parent Bronze Age cultures. A fusion between the two great groups of the Later Bronze Age—tumulus-builders and urnfield-folk is, however, a mark of the period in several regions.

Some divergence exists as to the precise delimitation of the Hallstatt period. Prof. Reinecke assigns to it a group of urnfields which, though directly ancestral to certain Hallstatt groups, lack iron and have no

exact counterparts at Hallstatt itself. Here his ' Hallstatt A ' is treated as a phase of the Bronze Age.

12. La Tène

A trading post on Lake Neuchâtel in Switzerland gives its name to certain cultures of the Second Iron Age. These, despite very marked local divergences, are still more homogeneous than those grouped under the name Hallstatt, and are indeed all facies or hybrid versions of single culture. This took its rise in eastern France, Switzerland or southwest Germany under Greek inspiration, transmitted principally from the Greek colony of Massilia (Marseilles) but partly also through Etruria.

It seems most likely that the diffusion of this culture was due almost entirely to racial movement rather than cultural borrowing. The authors and carriers of the cultures were admittedly Kelts but there may have been Kelts without a La Tène culture, while some of the later La Tène cultures belong to Kelticized peoples rather than Kelts.

13. Mesopotamia

Mesopotamia was first unified by a Semitic king of Babylon, Hammurabi, shortly after 2000 B.C. Previously independent dynasts had ruled over various City-States. Lists compiled shortly before 2000 B.C. purport to give the names and regnal years of dynasts who had obtained the hegemony over the whole land since an event termed the Flood, and name also kings who ruled before it. We should thus have a complete historical chronology reaching back to prediluvian times, were it not that the lists give in some cases obviously fabulous figures, and in others represent as ruling consecutively dynasts who actually ruled side by side. The earliest kings mentioned in the lists, actual monuments of whom survive, belong to the 1st Dynasty of Ur, the third after the Flood. It is generally dated about 3000 B.C., though some authorities would reduce these figures by 3 or 4 centuries. Under, and presumably older than, the deposits of Dynasty I at Ur are the Royal Tombs and other remains of a highly developed urban civilization, already with written records. Parallels have been found also at Kish and elsewhere. Still earlier are deposits of a different civilization already with writing and characterized by painted pottery best represented in the ruins of Jemdet Nasr. The Jemdet Nasr culture is preceded at Uruk (Warka), Ur and elsewhere by an older urban civilization in which writing was being developed, that is termed the Uruk I culture. Still older is a culture represented by a fine painted pottery akin to that widely diffused

on the Iranian plateau, with which metal objects are sometimes already associated. The culture has been named after AL'UBAID, a small village near Ur, where it was first identified. At Ur the characteristic pottery is found below as well as above fluvial deposits attributed to the traditional FLOOD.

14. EGYPT

The Nile valley was reduced to a single kingdom a little before 3000 B.C. by a king of Upper Egypt traditionally known as Menes. Thereafter the land was ruled by a series of Dynasties of varying power, three main epochs of complete internal solidarity and colonial expansion abroad (termed the Old, Middle, and New Kingdoms) being separated and followed by periods of decadence, internal anarchy and foreign invasion (1st Intermediate period, Hyksôs conquest, etc.). The growth of Egyptian culture before the reign of Menes is known by a large series of cemeteries (chiefly in Middle and Upper Egypt) that are called predynastic. The length of the predynastic period can only be guessed (I regard 2000 years as a minimum estimate). Throughout the period we are dealing with settled people, burying their dead in regular cemeteries, cultivating wheat and barley and possessed of domestic cattle, sheep and pigs. Polished stone celts are limited to the earliest phase, and small objects of copper soon occur, but there are no signs of true metallurgy before the Gerzean or Middle Predynastic, and only the Late Predynastic can be called Copper Age.

15. AEGEAN CULTURES

The prehistoric metal-using cultures of the Aegean fall into three interrelated groups—MINOAN in Crete, CYCLADIC in the Aegean Islands, and HELLADIC in Mainland Greece and on some of the western isles (Levkas and Thiaki). The Minoan culture (so termed by Sir Arthur Evans after Minos, a legendary king of Knossos in Crete) was throughout an urban civilization with regular trade and specialization of crafts and industries. Its history is divided into three main periods, Early, Middle and Late, each subdivided into three. The same general divisions are applicable to the humbler Cycladic and Helladic cultures. In Late Aegean times the Minoan culture spread to Mainland Greece and the Islands, developing in the former area a variant termed Mycenaean. In Late Aegean III, about 1400 B.C., this mainland offshoot outstripped its parent and became the dominant culture throughout the Aegean area.

16. Beaker

This term (sometimes with the qualification ' Bell-beaker ') is technically restricted to a class of beaker-shaped vases, decorated with patterns arranged in horizontal bands often executed with a short-toothed comb, that are found in graves, generally with contracted skeletons of brachycephalic type. They are often associated with flat, rivetless, tanged daggers, awls of copper, buttons with v-perforation, gold trinkets and (except in Spain) bowman's wrist-guards. These peculiar vessels are found in megalithic tombs in the Iberian Peninsula, South France and Brittany, and in rock-cut tombs in Sardinia and Portugal, but in trench graves without barrows in Upper Italy, Bavaria, the Rhineland, Thuringia, Silesia, Czechoslovakia, Austria, Hungary and Galicia. Two, apparently imported from Bohemia, have been found in Danish Passage Graves (dated to phase III there).

Analogous vases are found in the earliest round barrows of Britain, marking the beginning of the Bronze Age here. Those assigned to class B approximate closely to continental bell-beakers, especially of the Rhenish variety, and are associated with similar grave-goods. The British types A and C resemble rather a hybrid form found in Holland and southwest Germany and supposed to be influenced by Corded Ware. Like the latter, they may be accompanied by battle-axes of stone.

The bell-beaker typifies a culture which spread very rapidly over a great part of Europe, most authorities say from Spain. Being generally short-lived outside Spain and Britain, beaker-burials are only sporadic ; they therefore form a useful chronological horizon in many columns of our table. It is generally assumed that the beaker-folk settled in Britain about the same time as they overran Central Europe, but that here they continued to manufacture beakers long after they had vanished elsewhere.

17. Megalithic Tombs

Megalithic (*μεγας*: great; *λιθος*: a stone) tombs are usually divided into dolmens, passage graves and long cists. Formally a DOLMEN is a large box or small chamber formed by three (or four) very large stone uprights (pillars) supporting a gigantic capstone. Dolmens seem in all cases to have been buried in a mound up to the top of the pillar stones. Monuments corresponding to this definition occur in northern and western Europe, North and Central Africa,

Sardinia, Galilee and Transjordania, South Russia, Persia, India, etc., and may be of very varied age not necessarily particularly ancient. In Denmark, however, such tombs are the earliest megalithic monuments and give their name to the first clearly defined phase of neolithic culture there. The Danish nomenclature must be extended to other regions, but evidence does not, however, prove that all apparently similar structures are equally ancient.

PASSAGE GRAVES are chambers built in the manner of dolmens but of larger size and preceded by an entrance-passage leading to the chamber. Such are known especially in Portugal, North Spain, Brittany, England, Wales, Denmark and northwest Germany. In Denmark they belong as a whole to a period later than the dolmens. Finally STONE CISTS are long chambers (often subterranean) not preceded by a passage but opening through a portal onto a shallow porch. Tombs of this type occur in Sardinia, the Iberian Peninsula, all over France, in Great Britain, Ireland, Denmark, South Sweden and Central Germany. A direct evolution from the simple dolmen to the passage grave followed by a degeneration to the cist was once generally postulated but is now a discredited doctrine. All three forms are rather supposed to be versions of rock-cut chamber-tombs such as occur in Egypt, Syria, South Russia, Galicia, the Aegean, Sicily and Malta, as well as in Portugal, Sardinia and France. The so-called 'tholos tombs', beehive chambers roofed by corbelling and generally entered by a passage, such as occur in the Aegean, southwest Spain, South Portugal, Ireland and North Scotland may be treated as intermediate between rock-cut chambers and megalithic-built passage graves. It must be remembered that chamber-tombs continued to be built or cut down to quite recent times in the East Mediterranean area though the practice goes back at least to the third millennium there.

NOTE. Many of the places which are mentioned in the above notes and in the Chronological Table will be found on the maps illustrating Professor Gordon Childe's books, *The Dawn of European Civilization* (Kegan Paul, 1925); *The Danube in Prehistory* (Oxford University Press, 1929); *The Most Ancient East* (Kegan Paul, 1928); *The Bronze Age* (Cambridge University Press, 1930).

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Chronology of Prehistoric Europe : a Review*

by V. Gordon Childe

[As an appropriate addition to the introduction to the Chronological Table which precedes this article we print Professor Gordon Childe's review of Dr Åberg's important work on Bronze Age chronology.—Editor].

MOST of us have been nourished on text-books which placed the beginning of the New Stone Age in northern Europe seven or eight thousand years ago. Such figures are of course just guesses. Though de Geer's geochronology would seem to lend them a semblance of scientific authority, the recent tendency among archaeologists, particularly in this country, has been to reduce them very materially. Dr Åberg's latest book represents almost the culminating point in this tendency. The earliest tangible manifestations of neolithic culture in northern and central Europe—the Danish dolmens and the Danubian I culture—are here brought down nearly to 2000 B.C., to the Middle Minoan Age of Crete, the time of the Egyptian Middle Kingdom and the final decay of Sumerian civilization. The reasons which have led Åberg to these really revolutionary conclusions are not fully stated in the present volume : they depend in part upon the results of his studies on the Italian Iron Age and the Hallstatt period, already published and reviewed in Antiquity[1] ; on the other hand a fresh analysis of the continental Bronze Age is promised which will link up those periods with the Copper and Early Bronze Ages here studied, while Aegean chronology is to be subjected to an annihilating criticism. The work will eventually offer a single self-contained system the validity of which will largely be guaranteed by the internal coherence of the whole. No final judgment can then be passed on any isolated section.

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* *Bronzezeitliche und früheisenzeitliche Chronologie.* III, *Kupfer- und Frühbronzezeit. By* Nils Åberg. *Stockholm*, [Kungl. Vitterhets historie och Antikvitets Akademien] 1932. 25 *Kroner.*

[1] March 1931, p. 125 and September, p. 385.

Nevertheless the present work challenges a re-examination of the methods and data upon which the chronology of prehistoric Europe depends. Now the relative chronology of prehistoric times is determined principally by two methods—stratigraphy and typology. Where the continuous occupation of a single site over many generations offers us a complete picture of the developments and fluctuations of the local industries, the data of stratigraphy provide an indisputable standard. The inhabitants of Cisalpine Europe, however, from the New Stone Age onwards were distinguished by the peculiarity noted by Strabo ' of living in huts and readily shifting their settlements '. And so we lack stratified sites continuously occupied over a long period. On the contrary, our barbarian ancestors were continually introducing improvements into their tools and weapons partly perhaps, as Åberg hints, just because of the instability of their habits, partly because the models were often taken over from alien civilizations and had to be adjusted to local needs. Thus it becomes easy to establish chronological series illustrating the progressive development of axes, daggers, pins and razors.

Dr Åberg handles the typological method with masterly judgment and has purified his series from the local variations which in other systems masquerade as symbols of periods. But, like other exponents of the method, he is obviously unhappy when he comes to regions, like Mesopotamia, Crete, or even Hungary, where among the articles best suited to typological arrangement—metal tools, weapons and ornaments—satisfactory types had been early created and were thereafter retained without material modification. The stratigraphy of the *tells* in those countries attests the persistence of certain types over periods during which the towns or villages in question were rebuilt and remodelled several times. And inscribed or otherwise datable objects from the several layers prove that such structural periods do in fact denote substantial intervals of time. The range of Minyan ware over three or more centuries which seems to worry Dr Åberg is thus established by its association in various layers at the town of Phylakopi on Melos with well-dated Cretan imports ranging from rather before 1800 to nearly 1400 B.C.

On the other hand this same Minyan ware, so well fixed in the second millennium, is shown by the stratigraphy of a whole series of sites on the Greek Mainland from Asine and Tiryns to Eutresis and Orchomenos to succeed what are termed Early Helladic wares, which are in turn given a firm footing in the third millennium by association

with Early Minoan imports from Crete both at Asine and Zygouries.[2] Now on the peninsula of Levkas in West Greece, Dörpfeld has excavated three cemeteries, one, the 'R graves', containing pure Early Helladic pottery, the rest, termed F and S cemeteries, Minyan but no Early Helladic vases. Yet Åberg speaks of the Levkas tombs as forming a 'more or less synchronous constellation' with the Mycenaean Shaft Graves (which contain Minyan), some others at Sesklo in Thessaly and Troy II. A 'synchronism' which thus cuts right across the stratigraphical division between Early and Middle Helladic is not very convincing. If a copper dagger with its gold mount from one of the R graves on Levkas approximates fairly closely to a rapier from the Shaft Graves dated by Åberg 1550–1450 B.C., it is no less like one from Mallia[3] in Crete securely dated five hundred years earlier.

Even in barbarian Hungary we have stratified sites composed of a deposit 12 to 15 feet deep. The Nagy Sanc near Pecka (not far from Arad) is a *tell* 4 metres high, formed of fifteen distinct layers.[4] Yet practically the whole of this deposit is in effect (p. 53) assigned to the first period of the Bronze Age (estimated at 250 years on p. 160) because the pins associated in a grave at another site with a vase characteristic of the 13th stratum are still of 'Aunjetitz type'. In point of fact, equally archaic types are quite often found in Hungarian graves of the Pannonian group which our author assigns to period II. It is surely less difficult to suppose that in Hungary fashions in pins persisted for say five centuries than that Pecka was remodelled thirteen times in half that space.

Absolute dates for the prehistoric periods among illiterate barbarians depend upon contacts between them and the historic civilizations. These are expressed to the archaeologist in three main forms: (1) actual importations of historically datable objects found in chronologically significant contexts; (2) obvious imitations of such made exceptionally among the barbarians themselves; (3) datable types adopted and manufactured locally among the illiterate peoples. Only in the first instance is a synchronism reasonably well established, but even so it is only certain if it be bilateral—if barbarian imports coming

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[2] Seal impressions of Early Minoan III character from an E.H. III deposit at Asine (Persson, *Årsberattelse, Lund*, 1923–4, p. 162; leg amulet of like age from E.H. tomb at Zygouries, Blegen, *Zygouries*).

[3] Evans, *Palace of Minos*, II, 272.

[4] Childe, *Danube in Prehistory*, p. 260, cf. p. 282.

from the appropriate chronological horizon turn up in the historic civilization. The synchronisms between Egypt and Crete, between Crete and the Cyclades, are reliable just because they are of this bilateral kind. In the third case, on the contrary, the historically datable types only provide a *terminus a quo* for the barbarians' own products.

Down to the Hallstatt period the contacts between Cisalpine Europe and the historical world of the Mediterranean and Hither Asia are principally of the third kind. And they come mainly through Troy, itself a town of apparently illiterate barbarians datable only by the methods already described. It is the outstanding merit of Dr Åberg's present work that he has recognized the inconclusive nature of the arguments hitherto adduced for the absolute chronology of Troy II. Accordingly, in his attempt to delimit the beginning of the European Bronze Age, he sets out from a re-examination of the Trojan chronology. He relies mainly on a comparison between the metal objects from the ' treasures '—hoards buried just before the sack of the second city—and those from the Shaft Graves of Mycenae. He concludes that they must all belong to very nearly the same chronological horizon, that Troy II fell about 1500 B.C.

It is needless to examine in detail the agreements Åberg's analysis reveals. Some are very striking: both sites have yielded pommels of rock-crystal of the same type, which does show a typological advance over comparable objects from Early Minoan ossuaries; others are less convincing: granulation is attested as early as 1800 B.C.[5] (Middle Minoan I), to say nothing of the Royal Tombs of Ur at least a thousand years older than the Shaft Graves. What is important is the utility of the comparison itself. For the Mycenaean material to be valid as limits for the Trojan it must be assumed either that the techniques and models reached Troy via Mycenae, or that both centres were inspired from Crete. Åberg makes this assumption, albeit with an explicit reservation (p. 157) in favour of some possible but unknown Oriental source. Unfortunately the assumption is demonstrably false. In the early Sumerian graves of Kish, Ur and Fara[6] we find a whole series of distinctive types familiar from the Trojan hoards—tanged daggers, lock-rings, boat-shaped earrings, roll-head pins, whipped

[5] Middle Minoan I at Mallia, and Middle Kingdom Egypt at Dahshur cf. *Bulletin de Correspondence Hellénique*, 1930, p. 416.

[6] Heinrich, *Fara*, 1931, pl. 40; the data from the remaining sites are described in Childe, *The Most Ancient East*.

loops—that are missing in Crete. And at least some of these same types have recently turned up halfway along the Royal Road that led from the Euphrates to the Aegean at Alishar[7] in Cappadocia. In a word Trojan metallurgy and jewellery are rooted directly in Sumer, not in Crete. And so their limits must be fixed by Babylonian not Minoan–Mycenaean chronology. And whether we accept Woolley's high estimate of 3500 B.C. for the earliest Sumerian graves or reduce the figure with Christian[8] to about 2650 those limits lie well back in the first half of the third millennium.

Of course the Sumerian dates provide only an upper limit for the Troad, three months' journey away. But other discoveries may help us towards a more precise demarcation. Even from the unsatisfactory summaries available one can infer a general parallelism between Troy II and the phase of Alishar contemporary with the ' Cappadocian tablets ', 2200–2000 B.C. (Was the transmission of a whole cluster of Sumerian types to Anatolia connected with the Assyrian commercial activity revealed by those letters, or with earlier expeditions of the kings of Agade of which much later documents contain hints?). On the other hand the agreements between the Trojan treasures and the furniture of the R graves on Levkas upon which Åberg insists are complete, and these Leucadian grave-goods agree no less precisely with those from well-dated Early Cycladic tombs and Early Helladic settlements.

And if these arguments suffice to re-establish the claim of Bronze Age Troy II to a footing in the third millennium, other fresh facts push back still further the beginnings of the Anatolian Copper Age, represented by Troy I, which Åberg's table places about 1700 B.C. Thus Thermi was twice rebuilt before the foundation of Troy II. And similar hints are given in the east by the immense accumulation of debris termed Alishar I and by the appearance of ceramic types, closely allied to the Anatolian, at Ur and Uruk in the fourth millennium.

The discoveries at Ur and Kish incidentally transfer back to the third millennium the limits for the beginning of the European Bronze Age; for most of the Aunjetitz types represented at Troy also appear in the early Sumerian graves. The one type unrepresented in either area, the 'ingot torque', may go back nearly as far. It is found

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[7] cf. ANTIQUITY: a review of Erich Schmidt's *Anatolia Through the Ages*, p. 237.

[8] *Archiv für Orientforschung*, 1931, 100.

in Syria, and Dussaud has recently shown[9] that the attempt to pin it down to Middle Kingdom times on the strength of a hoard found at Byblos must likewise fail ; for the hoard is probably older than had previously been thought. It does not, however, follow that we must return to the old inflated chronologies for barbarian Europe. Contacts between the historical East Mediterranean civilizations and the barbarians north of the Alps still exist and are not entirely confined to the vague limiting cases that we have called class III.

Thus in what I call the Danubian II period, Åberg's Jordansmühl-Lengyel phase, we find in Hungary and Moravia curious clay cubes with one or two central cavities and lateral string-holes that reproduce every detail of an Early Minoan, proto-dynastic Egyptian and Early Sumerian stone paint pot.[10] They are in fact indubitably clay copies of the stone vases and, since the examples are few and are all confined to one relatively short phase, they may rank as class II contacts for chronological purposes. A date rather before 2500 would accordingly seem plausible for the beginning of Danubian II and would become almost certain if Frankfort[11] were right in tracing ' Danubian ' elements in Thessaly just before the belated arrival of the Early Helladic culture there.

Dr Åberg agrees that Danubian II overlaps with the early Passage Grave epoch in Denmark. This renders possible a rough check on the above date by evidence from two other channels of intercourse between the east and the north. A bone pin of south Russian type from an early deposit in a passage grave on Lolland establishes a class I synchronism between the early Passage Grave period and the Copper Age of the Pontic steppe.[12] This will some day be more accurately dated, but even now a stone battle-axe which, though locally manufactured, belongs to a specialized Pontic Copper Age type from an Early Macedonian layer suggests, as *a terminus ante quem* for that period, about 2000 B.C. The Atlantic route brought to Denmark about the beginning of the Passage Grave period or just before a peculiar copper dagger of a type distinctive of the corbelled tombs of Los Millares and

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[9] SYRIA, XI, 246.

[10] Childe, *Danube*, p. 77 ; cf. Evans, *Palace of Minos*, II, p. 45, fig. 12, and Heinrich, *Fara*, pl. 12.

[11] *Studies in Early Pottery of the Near East*, II, 33ff.

[12] The point is fully discussed in MAN, 1931, 135.

Alcalá in the Iberian Peninsula.[13] This establishes a class I synchronism between very early Danish passage graves and some phase of Los Millares. These tombs cannot be precisely dated, but much of the pottery from them is so like that from rather similar vaults in Early Minoan Crete[14] as to suggest a close approximation in time.

None of the above contacts in themselves would yield a strict synchronism, but the convergence of three quite independent lines of argument seems significant. A rough check is rendered possible by the few surviving pointers as to the date of the Aunjetitz culture; these do favour an overlap between that period and the Shaft Grave epoch. The clay copy of a Late Minoan I metal cup found in an Aunjetitz cemetery in Central Germany[15] would be conclusive did it come from a scientific excavation. As it is, that probability fits in well with other fragmentary clues—the segmented faience beads from, again questionably, Aunjetitz graves in Moravia and Poland and contemporary or rather later burials in Spain and England, on the one hand, on the other the amber and the halberd from the Shaft Graves themselves. If we may therefore infer that the Early Bronze Age or Aunjetitz period had begun by 1500 B.C., we have two poles a thousand years apart between which must lie the Danish Passage Grave epoch and the events comprised therein—the beaker episode and the beginning of the Aunjetitz period. I still feel that the most coherent pattern is obtained by putting the last event about 1800 and the beginning of the Passage Graves some four centuries earlier. The Editor of ANTIQUITY having given me the opportunity of putting this pattern on a large sheet of paper, it has seemed best here to sketch the sort of arguments by which it might be defended even at the risk of appearing too critical of another system that may well prove more coherent and logical than my own. This means no disparagement of Dr Åberg's colossal industry, vast erudition or penetrating insight and no attempt to understate the ambiguities and uncertainty of the system I today prefer.

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[13] Nordmann in *De forhistoriska Tider i Europa*, II, 120.

[14] Many unpublished vases in Siret's private collection are almost identical with those figured in Xanthudides, *Vaulted Tombs of the Mesará*, pl. XXV, bottom row.

[15] Evans, *Palace of Minos*, II, 175.

Notes and News

COMMUNAL BURIAL

The problems of early British and European origins are closely bound up with the burial-customs of the late Stone Age. To this period belong the megalithic burial-chambers formerly called dolmens, and all the long barrows, of earth and stone. In these, communal burial of many bodies was the rule ; but the precise form of ritual observed —necessarily a matter of inference—is still disputed. The object of the present note is to call attention to a little known article of Rolleston's and to the references there given (' On the People of the Long Barrow period ', *Journ. Anthr. Inst.* October 1875, v, 120–73). Rolleston summarized the theories then prevalent as consisting of three—the Successive Interments, the Ossuary, and the Human Sacrifice theories. He pointed out that the first two are not mutually incompatible, and he rejected the third. In support of the ossuary theory he quoted some interesting evidence which deserves to be rescued from obscurity and reconsidered. He cited a passage in Alfred's Orosius,[1] from which it appears that ' it was the custom of the Esthonians to keep the body of anyone who died one month, or even two months, or, in the case of kings, even half a year, before burning it '. The other is from a letter from G. Turberville to the poet Spenser.[2] Writing from Moscow he says :—

> The bodies eke that die unburied lie they then
> Laid up in coffins made of firre, as well the poorest men
> As those of greater state. The cause is lightly found,
> For that in winter time they cannot come to break the ground.

This seems a reasonable and practical explanation of the custom of Reservation of the Dead. It might well be continued, in accordance with the well known conservatism of ritual, long after the necessity departed, though perhaps it will not explain all such occurrences. It fits in admirably however with what is known or suspected of the origin of British long barrow makers ; for it has long been clear that some of them came ultimately from the East of Europe. The present

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[1] Pauli's *Alfred the Great* [and] . . . *Alfred's Orosius*, trans. by B. Thorpe, p. 255. (Bohn's series).

[2] Hakluyt's Voyages, ed. 1809, I, 433, and ed. 1903 (MacLehose), III, 128.

writer suspected this long ago, basing his opinion on the resemblance between a round-bottomed pot from Danilov (Yaroslav)[3] and the British neolithic vessels of West Kennet and Peterborough type. We now know much more about East Baltic and Russian pottery than we did then, and the resemblances are seen to be even more striking than was at first suspected. The presence, for instance, of both maggot-patterns and impressed holes (grubchen-keramik) on both classes of ware can surely not be fortuitous. Now this is precisely the region of winter-frozen soil where Reservation of the Dead was practised both in the time of Alfred and of the poet Spenser. May not our neolithic ancestors have observed a similar ritual in their Eastern homeland and brought it with them to this country ?

Certain features of the bones in long barrows cannot however be completely explained by any one of these three theories. Occasionally the bones found have been deliberately broken into small fragments while still ' green '. This could only have been done by the exercise of some force. In a long barrow at Wexcombe excavated by the writer and Professor Hooton of Harvard in 1914, a lower jaw bone (and other bones) was broken in a way that seems to rule out chance. The character of the fractures was such as must have occurred either during life or (much more probably) soon after death, while the bone still contained much organic matter. (Sir Arthur Keith agreed with this opinion at the time). These facts, which have been observed elsewhere, demand some explanation. The theory of Human Sacrifice, though perhaps supported by some slight evidence[4], is inadequate in such cases; and the others are irrelevant. O.G.S.C.

THE NAME OF THE GIANT OF CERNE

Direct evidence of any traditional name for the Cerne Abbas Giant is confined to a statement by Stukeley in 1764, that ' the people there give the name of Helis ' to the figure.* This rather curious name does not appear to have survived to the present day, but there is evidence suggesting that a very similar name was given to the Giant in the 13th century.

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[3] Report of the International Congress of Anthropology and Prehistoric Archaeology, 7th Session, Stockholm, 1874, p. 296, fig. 37.

[4] O. G. S. Crawford, *Long Barrows of the Cotswolds* (Bellows, Gloucester, 1925), p. 75; compare also p. 14.

* Minute Books, Society of Antiquaries, IX, 233, quoted by Colley H. March in *Proc. Dorset N.H. & Arch. Soc.*, XXII, 106.

Sir Flinders Petrie has drawn attention to the 13th century version of the legend of St. Augustine's visit to Cerne at the end of the 6th century given by Walter of Coventry. This version, while differing but little in its essentials from those given by other medieval hagiologists, interpolates an important clause after the initial mention that Cerne is 'in Dorsetensi pago', adding 'in quo pago olim colebatur deus Helith'.[1] This, as Sir Flinders has pointed out, 'may preserve the early medieval name of the Giant'.[2]

There seems then a slender thread of evidence to suggest that for 500 years the Giant had been traditionally associated with a name Helith or Helis. It is of course conceivable that Stukeley's name was not a true local one, but unless derived from Walter of Coventry it is difficult to suggest his source. Here again 'deus Helith' may not refer to the Giant, but the identification is almost inevitable.

Support for this conjectural name of the Giant would be given if any parallel could be found in myth, tradition or folklore to a club-bearing giant with a name like Helith, for the earlier form is naturally to be preferred. Fortunately a fairly good parallel can be detected, which goes to confirm the identification.

An anonymous article in the *Quarterly Review* for 1902, discussed at length by Mr R. Lowe Thompson in his recent *History of the Devil*, traces the Harlequin of pantomime, via the Arlechino of the Comedia del' Arte, to a group of medieval legends centreing round a demon figure, particularly a 'wild Huntsman' leading a troop of damned souls, who frequently appears in medieval French stories under some such name as Helequin or Hierlekin. The earliest (late 12th century) reference to 'familia Herlechini' describes him as a club-bearing giant. Now in the English forms of the legend the Huntsman is confused with his Hunt by popular etymology taking the 'kin' to indicate the followers, and thus creating a new leader, Herle. But more particularly to our purpose is an English form of Helethkin (probably due to the influence of OE 'heoloth-cynn', the hell-folk). This form does seem to provide the necessary link with Walter of Coventry and the Giant, and give reality to the existence of Helith as the medieval name of a spectral club-bearing giant.

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[1] *Memoriale*, ed. by Stubbs. Rolls Series, 1872, I, 60.

[2] *The Hill Figures of England*, p. 10. Occasional paper. No. 7, Royal Anthropological Institute, 1926.

The ultimate origin of this legendary figure seems probably to be found in some form of Hercules, and I am informed that although the early French forms of the name would be a quite irregular development, philological connexion between Herlechin and Hercules is not out of the question. The Italian Arlechino in his earliest days seems to have been a figure closely resembling Hercules in his attributes.

An additional note may be added on the repeated statement in the English editions of Camden that St. Augustine founded Cerne Abbey ' when hee had broken there in pieces Heil the Idol of the heathen English–Saxons, and chased away the fog of paganish superstition ' (1637, p. 212). Heil suggests connexion with the Giant and with Helith, but the source of the statement has not been traced. Gibson gives William of Malmesbury as authority, but although this writer in his *De Gestis Pontificum Anglorum*[3] gives a very full account of Augustine's visit to Cerne, no mention is made of the overthrowing of Heil. Nevertheless the missionaries met with a very hostile reception, the crowning insult of which appears to have been the fixing of fish tails to the saintly garments—' ita ut etiam caudas racharum vestibus ejus affigerent '. The incident is very curious, and its significance more than obscure, but the suggested reading ' caudas vaccarum '—cows' tails, is perhaps preferable to ' caudas racharum '—' tayles of thornback or lyke fysshes ', as the Golden Legend version of the incident, which is however localized in Kent, gives it.

The miraculous and edifying termination of the legend as there given makes a fit conclusion. When the people had driven Augustine out ' he besought Almyghty God to shewe hys jugement on them ; and God sent to them a shamefull token ; for the chyldren that were born after in the place, had tayles, as it is sayd, tyll they had repented them. It is sayd comynly that this fyll at Strode in Kent ; but blyssyd be Gode, at thys daye is no such deformyte '. Nor is there, I understand, at Cerne. STUART PIGGOTT.

PALAEOLITHIC AXES FROM TRANSJORDAN

When I was in the East in 1928 I had the good fortune to visit several inaccessible sites in the company of Group-Captain Rees, v.c., then in command of the Royal Air Force, Transjordan. On one of

[3] Rolls Series, 1870, 184.

the basalt-capped hills,* on the level surface at the top, I picked up one of the fine specimens here illustrated (fig. 1); and as we were descending the hill Group-Captain Rees picked up another (fig. 2). Both have a brown leathery patina, and are evidently of great age; they contrast strongly with other worked flints to be found on the top of the hill, which are much lighter in colour, and quite devoid of the typical brown leathery patina. This patina closely resembles that so familiar on Egyptian specimens, such as may be picked up in the desert near the Pyramids of Giza.

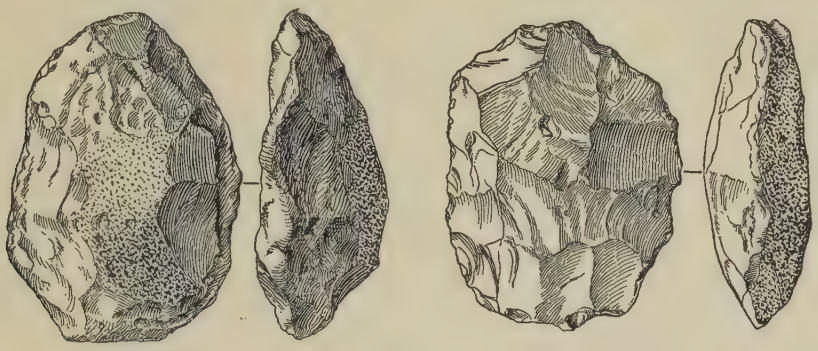

FIG. 1. FIG. 2.

PALAEOLITHIC AXES FROM TRANSJORDAN ½

The hill itself is residual, the remnant of a limestone plateau covered with a thin sheet of basalt. At some date subsequent to the deposition of the basalt, this plateau has been dissected by the action of rain-water; this does not however necessarily indicate a change of climate, for rain does fall still over the area, and pretty heavily at times.

Both in type and, to some extent, in patina these Transjordan hand-axes resemble those from the high ground round Basingstoke, now to be seen in the Basingstoke Museum.† Amongst these is a tortoise-core. It is not unlikely that the artifacts from these two very widely separated regions may be contemporary, and that their patina may be the result of exposure to sun and rain throughout millennia. Similar causes produce similar effects. O.G.S.C.

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* Lat. 31° 48′ 30″ N; Long. 37° 30′ 30″ E. The axes are now in the British Museum.

† See ' The Antiquity of Man in Hampshire', by J. R. Ellaway and G. W. Willis, *Proc. Hants. Field Club*, 1927, IX, 178–188.

HARPOON FOUND IN THE NORTH SEA

Dr Muir Evans has presented to the Castle Museum, Norwich (to whom we are indebted for the photograph opposite) a bone harpoon of the Kunda type. It was discovered in a lump of peat (known by the seamen as ' moor-log ') dredged up by the trawler *Colinda* from a shoal called the Leman and Ower sands 50 miles northeast of Cromer (about lat. 53° 10′, long. 2° east). As will be seen from the illustration, it closely resembles the Holderness specimens, whose authenticity has been disputed (though never by us) ; he would be a bold man who would dispute the authenticity of the present specimen.

It is of great scientific value, for it proves—what indeed was obvious already—that during the Maglemose period, there was fresh water at a spot now many feet below the sea. The presence of man in Britain at that time is already fully vouched for ; but how did he get here ? The answer to the question is that he walked across either what is now the North Sea or the English Channel.

We know little about the mesolithic period in Britain, and it is good news therefore that a book on it, by Mr J. G. D. Clark, will shortly be published by the Cambridge University Press.

ARCHAEOLOGICAL RESEARCH IN TURKEY

We have received the following interesting report* of German archaeological research in Turkey, 1924–31, from M. Schede, Director of the Deutsches Archäologisches Institut, Constantinople.

German archaeologists resumed their research-work in Asia Minor and Constantinople in 1924, and, as before the war, they received every kindness from the Turkish government. Their first object was to complete the excavation of the temple of Apollo at Didyma, begun by Wiegand and Knackfuss in 1908, and in this were successful, after clearing away the rubble on the north and west sides. This temple, the ancient oracular shrine of Miletus, is now the most important ruin in Asia Minor, and the best-preserved and most instructive example of Hellenistic architecture. Nothing unexpected was found, for the earlier excavations had made the site perfectly plain as regards its plan and lay-out, and the investigation was finished in 1925.

Excavations were also made in 1924 in the Troad on the bay of Besika under the direction of O. Mey, assisted by W. Dörpfeld and

* Translated by Roland G. Austin.

HARPOON DREDGED FROM THE LEMAN AND OWER SANDS, 50 MILES NORTHEAST OF CROMER

(about lat. 53° 10′, long. 2° east).

Now in the Norwich Castle Museum. Exact length 8⅝ inches

facing p. 218

M. Schede.[1] The main purpose was to ascertain whether the anchorage of the Greeks was here and not in the Dardanelles, and whether the Ujektepe was the common tomb of Achilles and Patroclus while the Besika-tepe was that of the Achaeans. The first problem could not be solved, because the ground-water prevented deep excavations ; the work done on the Ujektepe confirmed Schliemann's view that it was a site belonging to the archaic period of Greece and occupied again in Roman times, while the excavation of the Besika-tepe had to be prematurely abandoned.

More important investigations were renewed at Pergamum by T. Wiegand, with the help of G. Oberländer, and the work has been continued each year since 1927. This is the third period of excavation of the site since it was first opened up by Humann and Conze in 1878–86 (when the exhibits in the Berlin Museum were discovered). Between 1900 and 1914, the work was continued by Conze and Dörpfeld. So far Wiegand has examined three sites[2] : (a) the so-called Palace of the Princes, near the great altar, which proved to be a complicated building of the royal period, of uncertain purpose ; (b) the ' Garden of the Queen ', on the top of the citadel, where arsenals and a barracks of the early Hellenistic period were discovered ; (c) the shrine of Asclepius outside the city, where the physician Galen worked, which was found to be an ambitious lay-out dating entirely from the second century A.D. Two very interesting circular buildings were discovered, one being the temple itself, adjacent to which was a large festival-place, bounded on the south by a two-storeyed hall 126 metres in length and connected at its northwest corner with a great theatre (the fourth to be found at Pergamum). The water-course of the ancient healing spring, which was led to the rotunda below through a vaulted conduit 80 metres long was found, and also some important inscriptions, and some good sculptures, one of which is a heroic statue of Hadrian in the nude. These excavations should be completed this year.

Work at Ephesus for the Turkish State Museum in Smyrna and the Austrian Archaeological Institute, was begun in 1926 under the direction of Josef Keil.[3] This was made possible through the

[1] Mey, *Das Schlachtfeld von Troja* ; Dörpfeld, *Studien zur vorgeschichtlichen Archäologie*, Alfred Götze dargebracht 115 ff.; Schede, *Arch. Anzeiger*, 1929, pp. 358–65.

[2] Wiegand, *Bericht über die Ausgrabungen in Pergamon*, 1927 (*Abhandl. Berl. Akad. d. Wissensch.* 1928); Wiegand, *Arch. Anz.*, 1927, 466 ff.; 1930, 191 ff.; 1931, 308.

[3] Keil, ' Bericht über die Ausgrabungen von Ephesos ', *Jahreshefte des Osterreichischen Arch. Instituts*, bd. 23–27, XII–XVI, and ' Führer durch Ephesos ', 1930, *Arch. Anz.*, 1930, 444 ff.

generosity of Mr Rockefeller, and by grants from the Turkish Government, the Forschungsgemeinschaft der deutschen Wissenschaft, and the Austrian Ministry of Education. The results of the excavations included the discovery of a metroon, with many votive reliefs dedicated to Cybele ; a temple dedicated to Domitian, and the so-called temple of Claudius, which was probably a shrine of Serapis. Three of the city's gymnasia were laid bare, the one at the Stadium yielding many fine sculptures, chiefly copies of famous classical works of art : among them a relief of Icarius, the Hestia Giustiniani, and the Discobolus. A number of late-period (*spätantike*) sarcophagi were found in the Necropolis.

The examination of Christian shrines gave valuable results. The grotto of the Seven Sleepers, one of the most celebrated places of pilgrimage of the Middle Ages, proved to be a great and ambitiously planned coemeterium of several storeys, with hundreds of grave-sites. The church of St. John, built by Justinian on the site of the evangelist's grave, was completely uncovered, thus adding to our knowledge of the oldest mausoleum of the district.

In 1926 and 1928 D. Krencker and M. Schede, acting for the Deutsches Archäologisches Institut and the Forschungsgemeinschaft der Deutschen Wissenschaft, gave their attention to the Roman temples of Ancyra and Aezani,[4] which are in a comparatively good state of preservation, and should be studied in every detail in order to increase our knowledge of the history of art in Asia Minor under the Empire. French archaeologists have already done good work at both sites : Guillaume at Ancyra[5] and Landron at Aezani[6], but considerable advances were made on their discoveries. At Ancyra it was possible to excavate at various points, and the problem of its pillar-structure was solved. It stood on a podium, and was pseudodipterous. The pronaos had four pillars in front of the wall-ends (*antae*), the opisthodomus two pillars between them. The order was probably Ionic. The temple of Augustus was thus remarkably like the temple at Aezani, though about 100 years older, for here too the position of the four-pillared prostasis

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[4] Krencker, *Gesellschaft von Freunden d. Techn. Hochschule Berlin zu Charlottenburg*, 1927. Schede, *Gnomon* 2, 1926, 746 f. ; 5, 1929, 60 f.

[5] Perrot, Guillaume, Delbet, *Exploration archéologique de la Galatie et de la Bithynie*, 1862.

[6] Lebas, *Voyage archéologique en Grèce et en Asie mineure*.

was found to be in front of the pronaos, contrary to the views of Lebas and Landron. At Aezani the structure is so well preserved that only slight excavations were needed to give a clear picture of nearly all the temple buildings, and it has now become one of the best known of ancient architectural sites. The most striking parts are the front architraves on which was the inscription of consecration, although admittedly only the holes for the insertion of the bronze letters are left, and also the middle pediment-angles (*acroteria*), where imposing busts of divinities were found in the scrolls. The altar stood in front of the temple, and beyond was a beautiful propylaeon, through which access was gained to the halls of the large temple court, with their fine decorations of the Antonine period. Near Aezani lies the cavern of Meter Steunene (Anderson, *British School Annual*, 4, and Wiegand, *Athen. Mitt.*, 1911), and here were found many fragments of Hellenistic pottery, which proves that the shrine itself was older than the lay-out of the temple.

In October 1929 the recently-founded Istanbul centre of the Deutsches Archäologisches Institut began work under the direction of P. Wittek, acting for Turkey, and M. Schede for Germany. Hitherto German archaeologists have been represented here by a member of the Berlin Museum. One of the objects of the Institute is to survey important monuments still *in situ*, and the obelisk of Tutmosis III in Constantinople was thoroughly examined by G. Bruns, and the aqueduct of Valens by K. O. Dalmar, while K. Stein did similar work on the city walls of Nicaea.[7] A survey of the walls of Constantinople will be carried out by H. Lietzmann, F. Krischen and others, acting for the Forschungsgemeinschaft der Deutschen Wissenschaft.[8]

In the autumn of 1931 the Deutsches Archäologisches Institut, together with the Deutsche Orientgesellschaft, undertook excavations at Boghaz Keui, the ancient Hittite capital, in which thousands of cuneiform inscriptions and striking architectural remains were found in 1907 by Turkish and German archaeologists. Work was begun at the citadel of Büyük-kale, under the direction of R. Bittel; the stratification of the ceramic was accurately noted and related to certain buildings. A number of cuneiform tablets were again found: not however in their original positions but used as rubble. The work here is to be continued, and promises valuable results.

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[7] *Arch. Anzeiger*, 1930, 462 f.

[8] Lietzmann, 'Die Landmauer von Konstantinopel', *Abh. der Berl. Akad.*, 1929; *Arch. Anz.*, 1929, 339.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

On a rock near a dolmen in the department of Charente Inférieure has been found a sculptured hand with some of the fingers missing. (*Bull. Soc. préh. franç.*, January 1932, XXIX, 62).

With reference to the ' coin-in-the-slot ' machine referred to on p. 111 of our last number, Sir George Macdonald writes :—' Your contributor will find a description of it in Heron of Alexandria, Πνευματικά, I, 21. The passage is reproduced, along with an excellent diagram, in Wilamowitz-Moellendorf's *Griechisches Lesebuch*, 2te hbd, p. 261. The principle is, I believe, identical with that of modern " penny-in-the-slot " contrivances '.

Slum-clearance in Exeter has led to an effort to recover the plan of Roman Isca. Preliminary work has been done, and to continue it on a larger scale money only is required. Contributions may be sent to the Treasurer, Rear-Admiral F. B. O'Dogherty, Old Fairfield, Chudleigh, Devon.

We learn, through the good offices of one of our readers, that the ancient harbours of Carthage are in a sorry state. Situated in the middle of the modern village of Salambo, they no longer function as in ancient times ; indeed their size is so small that one wonders how they can ever have held the multitudinous craft that frequented them. Now they have become no more than a cess-pool for the adjacent houses ; and when we are told that in summer they become nearly dry, we can understand that their annihilation is demanded by residents. Two courses are open—to fill them up or to restore their connexion with the sea ; and we hope that, in spite of the expense, the latter course may be adopted. Their historic interest is great ; nor is it unlikely that,

in the process of clearance, valuable archaeological discoveries will be made. Surely there must be at the bottom of them a host of valuable objects lost overboard in ancient times? The Tunis Museum has already been enriched by submarine discoveries (see ANTIQUITY, 1930, IV, 405, 408) and here is a chance of yet further riches.

Great success has attended the excavation of Mintarno in Central Italy, on the Gulf of Gaeta. Let us hope that it will be crowned by a speedy and adequate publication of results. Amongst the buildings revealed are the following :—Remains of an Augustan period temple ; an Italiote temple of the period of Sulla with a great and mostly intact sanctuary wall ; a second century A.D. water-clock or fountain ; the Appian Way in its unbroken and original progress through the town, with cross streets, man-holes, and sewers all perfectly intact ; a stretch of fourth century B.C. fortification wall of stone in opus quadratum ; an adjoining still earlier wall of polygonal construction, and at the point of junction of these walls a massive tower of the Augustan age ; two buildings in the temple area of fourth and third century B.C. construction ; another part of the city wall going back to the fifth century B.C. ; a colonnade of the fourth century B.C. ; three temples of the third and first centuries B.C. and the first century A.D. ; an elaborate nymphaeum of the time of the Emperor Hadrian ; and the arcade, proscenium, and orchestra pit of the theatre. (*Glasgow Herald*, 25 January).

A copper celt (axe) has been found at Ipplepen, Devon, in digging the foundations for some new houses. (*Devon & Exeter Gazette*, 1 February 1932). A similar find came to light recently on Hazel Down near Longstock Park, Hants. (*Antiq. Journ.*, XII, 70, 71).

A branch of the Edinburgh League of Prehistorians has been formed at St. Andrews. In the course of an address at the inaugural meeting Professor Gordon Childe referred to ' Gaulish walled forts near Abernethy and Forgandenny [which] were proofs of a hitherto unsuspected landing of Celts about 250 B.C., who must have sailed direct from Gaul without passing through England '. (*Glasgow Herald*, 6 February).

In our last number we referred (p. 95), with all reserve, to the alleged authentication of the Pleistocene age of the Oldoway skeleton. We did not conceal our doubts, and they are evidently shared by Professors D. M. S. Watson, of London University, and C. Forster Cooper, of Cambridge University. In a letter to NATURE (27 February) they adduce reasons in support of their ' conclusion that the Oldoway man reached the position in which he was found by an artificial and probably a relatively recent burial ' ; and they challenge the original discoverer and his associates to explain the grounds on which they based their opinion.

The importance of the alleged great age of the skeleton lay of course in the fact that it is in every way a specimen of modern man (*Homo Sapiens*) ; and it would be by far the oldest representative if the claim were substantiated. As it is, it looks as if Oldoway man would go the way of his predecessors of Galley Hill and Ipswich—the way that leads from the main hall to the cellar of the museum.

Dr L. H. DUDLEY BUXTON writes :—' Professor Dreyer of Grey University, Bloemfontein, South Africa, has reported in a South African paper an ancient human skull of uncertain geological age but in a complete state of fossilization. The short face, well developed chin and very large mandible are in Professor Dreyer's opinion in no way primitive. The cranial features are however extremely abnormal, being rather within the range of microcephalic idiots than of normal human beings. The estimated cranial capacity is below 900 cc. It is probable therefore that we are faced either with a pathological specimen or else with a hitherto unknown type of man. It is hardly possible from a brief description and a bare outline to form any definite opinion one way or the other, and a full description of the specimen will be awaited with great interest. It is not necessary to remind readers of ANTIQUITY of the great importance of finds made in South Africa in the last few years and it is most satisfactory to know that Professor Dreyer, who has described the skull mentioned above, has recently made extensive finds of human remains in the Matjes river shelter associated with a variety of cultures from Mossel Bay through a not quite typical Smithfield to examples of the Wilton type '. A paper on these skulls was read at the Royal Anthropological Institute by Sir Arthur Keith on 8 January last (*The Times*, 9 January 1932).

The band-keramik village outside Cologne is yielding most interesting plan-results. A narrow trench has been discovered dividing the enclosed area into two unequal portions. Future work will, it is hoped, determine whether the smaller of these was for cattle ; since a pond has already been found in it, this seems highly probable. The domino-like arrangements of, usually, nine post-holes are explained as the supports of granaries. It was necessary to raise wheat above the ground to preserve it from decay, and, we may add, mice and rats. Similar raised granaries were found by General Pitt-Rivers in the Romano–British village of Rotherley. (*Excavations in Cranborne Chase*, II, 55).

We wish the excavators the best of luck, and hope that this exceedingly well conducted excavation will be carried to a successful conclusion. A complete plan of one village will be a great achievement. *Finis coronat opus*. (Dr Werner Buttler in *Forschungen und Fortschritte*, 20 February 1932, 65–67 ; see also ANTIQUITY, 1931, V, 227–9).

On page 498 of our December number (no. 20) we referred to Miss D. A. E. Garrod's excavations ; these were carried out by her on behalf of the British School of Archaeology jointly with the American School of Prehistoric Research (C. G. MacCurdy, Director). We regret that, in our original reference, we omitted to mention the name of the American School of Prehistoric Research. The omission was, it need hardly be said, purely inadvertent. On account of the ramifications of research organization it is not always easy to avoid errors of this kind when one is reporting archaeological news, but we sincerely regret the oversight.

The excavations at Salmonsbury, near Bourton-on-the-Water, Glos., will be resumed this summer if sufficient financial support is forthcoming. We cordially recommend these excavations to our readers as worthy of their support ; a preliminary report on the first season's work will be found in ANTIQUITY (December 1931), V, 489–91. Contributions should be sent to Mr E. W. Kendall, Hon. Treasurer, Bourton-on-the-Water, Glos.

The ninth annual interim meeting of the Anglo–American Historical Conference will be held at the Institute of Historical

Research, Malet Street, W.C. 1., on Friday, 1 July 1932. The Continuation Committee will present their report at 2.30 p.m., after which Professor J. L. Myres, of the University of Oxford, and Professors H. J. Fleure and E. F. Jacob, of the University of Manchester, will open a discussion on ' The Relations between Historians, and Geographers and Archaeologists '. There will be an informal gathering at the Institute at 8 p.m. Further information may be obtained from the Secretary of the Institute.

Excavations have been continued at Nineveh under the direction of Dr R. Campbell Thompson, who reports to *The Times*, 11 April (p. 8) on the results. The most important work was digging a pit about 90 feet deep to virgin soil through five strata. The usual polychrome pottery (dated by the finder at about 3300 B.C.) was found in the uppermost stratum ; the second contained fragments of polychrome ware claimed to be many centuries older.

The Viennese Academy of Sciences and the Egyptian Museum of Stockholm have completed the excavation of the neolithic settlement at Merimde, near Beni-salame, about 32 miles northwest of Cairo, the results disclosing much which concerns the life, customs, and crafts of the ancient inhabitants. (*The Times*, 15 March, p. 13).

As the result of discoveries in the Wady Ghazzeh (Gaza) Sir Flinders Petrie reports some interesting customs associated with the introduction of the horse into Egypt and Palestine. (*The Times*, 25 February, p. 10).

A useful summary of important objects of antiquity added to the Italian Museums during the 10 years of the Fascist régime is published in *The Times*, 8 April, p. 12. They have been arranged, with other exhibits, in the National Gallery of Modern Art in Rome.

An expedition from Yale University under the leadership of Professor Hellmut de Terra, research associate in geology, is to explore the Himalaya and Western Tibet for evidence of the theory that Man originated in Central Asia. (*The Times*, 19 April, p. 17).

The discovery of a 'Celtic' farm-pond near the top of Nore Hill, Eastham, Sussex, is described in some detail by Mr S. E. Winbolt. (*The Times*, 19 April, p. 19).

A report on recent additions to the Cairo Museum is printed in *The Times*, 19 April, p. 13, the most important being the Tutankhamen finds. There are also some funerary remains from a cemetery at Kostol, on the east bank of the Nile, where the Egyptian Government Survey, under the direction of Mr Emery and Mr Kirwan, have done some useful work in the huge tumuli of early Byzantine times.

The Rome correspondent of *The Times* has received a report from Dr Luigi Ugolini, leader of the Italian Archaeological Mission in Italy, on his work at Butrinto, Albania, where attention during the past season has been given to the completion of the excavation of the theatre. The auditorium and the orchestra date to the fourth century B.C. The stage, which is in excellent preservation, is of Roman construction and rests in part on the remains of the Greek original. Many inscriptions, and some good statuary have been found. (*The Times*, 19 April, p. 13).

The discoveries on the site of the Roman amphitheatre at Chester were described recently by Professor Newstead in a broadcast talk, the substance of which is given in *The Times*, 18 April, p. 9. The date of the structure as shown by the pottery is placed towards the end of the first century A.D. We cordially support the appeal which is being made for funds to preserve it.

Dr H. Frankfort, Director in Iraq of the Oriental Institute, University of Chicago, writes to *The Times* (26 March, p. 15), on new evidence of intercourse between India and Babylonia shown by a seal found at Tell Asmar, the site of ancient Eshnunna, about 50 miles northeast of Baghdad. Dr Frankfort states that the seal is without parallel among known cylinders. Certain peculiarities connect the seal definitely with the Indus civilization and there is no doubt it is an importation from the Indus Valley which reached Eshnunna about 2500 B.C.

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. *Books are occasionally included.*

Some recent contributions to the Pleistocene succession in England, by K. S. Sandford. *Geological Magazine*, Jan. 1932, LXIX, 1–18.

A brief critical summary of recent work, with attempted correlations between the Upper Thames, the Lower Thames, and East Anglia ; together with comments on the need of coordination of research concerned with these problems. No student of human origins can afford to miss this paper. We have in England a wealth of evidence bearing closely on man's antiquity, but it needs disentangling, and here we are given a general view of the present state of the process.

Climate, vegetation and man in the Huddersfield district, by T. W. Woodhead. Tolson Memorial Museum Publications, Handbook VIII, 1931. Paper 1*s* ; limp cloth 1*s* 3*d*.

One of the completest regional studies of its kind in existence, fully illustrated by photographs of models (relief-maps) ; and concluding with a short chronological table from 1100 B.C. to A.D. 1000.

Post-glacial succession of forests in Europe, by T. W. Woodhead. *Science Progress*, October 1931, no. 102, 250–61.

Another attempt at correlation, with a table particularly detailed in regard to vegetation.

Zur Megalithkultur Nordwest deutschlands, by Dr Ernst Sprockhoff (Römisch–Germanisch Zentral-museum, Mainz). Nachtrichten aus Niedersachsens Urgeschichte, no. 4, 1930. (August Lax, Verlags-handlung, Hildesheim). pp. 56, 23 illus.

A very useful account with many plans and three distribution sketch-maps.

Notes de préhistoire palestinienne, by R. Neuville (Jerusalem). *Journ. of the Palestine Oriental Society* (Jerusalem), 1930, X, 64–75 ; 193–221.

Valuable notes on the classification and relative age of flint implements in Palestine —a subject which has been neglected by most of the excavators in that country. Full cognizance is taken of Miss Garrod's work. No plans or sections, however. (A criticism of the author's dating is made in the article by Dr Albright quoted in the next notice).

Recent progress in the late prehistory of Palestine, by W. F. Albright. *Bull. Amer. Sch. of Oriental Research* [BASOR], April 1931, no. 42, 13–15.

The following paragraph is worth quoting in full:—'We have now, as a result of less than three years of work on the part of a small group of scholars, a nearly complete classification of the more important successive cultures of Palestine at the end of the Stone Age. First there comes Natufian, parallel (roughly speaking) with the Tardenoisian of Europe and the latest Capsian of Egypt. Agriculture and presumably the domestication of animals begin, but pottery is unknown. Next we have the age of the first potters, the age when copper began to be used, the period of the Campignian of Europe and Faiyumian and Badarian, etc., of Egypt. Mesolithic now becomes Neolithic, not later than 4000 B.C., at the lowest computation. Nothing so far found in Palestine appears to belong in this age, which is thus a lacuna to be filled by the Palestinian archaeologist. Then comes the characteristic Chalcolithic of Palestine, the Ghassulian, which has been found in the caves of Galilee and Carmel as well as in the lower Jordan valley. Finally after 3000 B.C. we have the Early Bronze, with its Tahunian flint industry'.

The Excavations at Nuzi: preliminary report of the fourth campaign, by Prof. Robert H. Pfeiffer. BASOR, April 1931, no. 42, 1–7. (Air-photograph, giving plan of excavated ruins).

On the map found at Nuzi, by W. F. Albright. BASOR, no. 42, 7–10, illus.

We hope to revert later to this very interesting clay-tablet of the 3rd-millennium.

Letter of February 28 [1931] from Dr Speiser to the President of Dropsie College and the Director of the American School at Baghdad (Second campaign at Tepe Gawra). BASOR, April 1931, no. 42, 10–12.

Describes work at this very important early tell, near Mosul. 'The peculiar fascination of Tepe Gawra is due to the fact that, of its twenty-odd strata, only four are later than the third millennium; more than ten are of the aeneolithic or prehistoric period, which belongs primarily to the fourth millennium. These numerous prehistoric levels make the mound the oldest in Iraq, a fact that can scarcely be overstated'. A critical study of the flint (and obsidian) implements, especially those from the lowest levels, seems greatly needed; no doubt such will be published in the full report. A 'potful of charred wheat' was found in a layer assigned to the fourth millennium ('Gawra 1').

Excavations in the Wady el Mughara, 1931, by Dorothy Garrod. *Palestine Exploration Fund, Quarterly Statement*, January 1932, 46–51.

Records the progress of excavations during 1931 in the Wady el Mughara by Miss Garrod and her colleagues. Deposits of Mousterian and Natufian (mesolithic) age were found, together with 17 Natufian burials and the skeleton of a Mousterian child ($2\frac{1}{2}$ years old) of 'definite Neanderthal type' (Keith). The lower Natufian contained sickle-blade hafts.

Opportunism and the factors of invention, by H. S. Harrison. *The American Anthropologist*, Jan.–March 1930, XXXII, no. 1, 106–25.

An important paper, by the Director of the Horniman Museum, on the fascinating subject of tools, treated (we think we may say) from an ' organic evolutionary ' point of view. It is not easy reading, but it must be studied by sociologists as well as by anthropologists, as it deals with fundamental matters.

Die Alamannen in Württemberg, by Walther Veeck. 1931. [Germanische Denkmäler der Volker-wanderung-zeit. Issued by the German Archaeological Institute, Frankfurt-on-Main]. Walter de Gruyter, Berlin W. 10. Paper, RM 65 ; bound, RM 75.

An aerial expedition to Central America, by Percy C. Madeira, Jr. *Museum Journal* [Univ. of Pennsylvania, Philadelphia], June 1931, XXII, 95–147.

The Chambered Cairn of Bryn Celli Ddu, by W. J. Hemp. *Arch. Camb.*, Dec. 1931, LXXXVI, 216–62.

In part a summary of and in part supplementary to the article in *Archaeologia*, LXXX, 179–214, by the same author.

The Administration of Archaeology in Wales in 1931. Presidential Address by R. E. M. Wheeler. *Arch. Camb.*, Dec. 1931, LXXXVI, 340–52.

Roman Britain in 1930, by R. G. Collingwood and M. V. Taylor. *Journal of Roman Studies*, 1931, XXI, 215–50.

The usual, and indispensable, record of excavations, inscriptions and other discoveries.

Notes on some Romano–British pigs of lead, by G. Clement Whittick. *Journal of Roman Studies*, 1931, XXI, 256–64.

Saxon Lydd, by Gordon Ward. *Archaeologia Cantiana*, 1931, XLIII, 29–37.

An interesting topographical study—Saxon bounds, field-work.

Notes on some West Kent roads in early maps and road-books, by E. G. Box. *Arch. Cantiana*, 1931, XLIII, 85–98.

The Sturge Collection : an illustrated selection of flints from Britain bequeathed in 1919 by William Allen Sturge. By Reginald Smith. London : British Museum, 1931, 25*s*.

Notes on (1) certain prehistoric relics from Orkney, and (2) Skara Brae : its culture and its period, by J. Graham Callander. *Proc. Soc. Ant. Scotland*, 1930–31, LXV, 78–114.

The early Bronze Age flint dagger in England and Wales, by W. F. Grimes. *Proc. Preh. Soc. East Anglia*, 1931, VI, 340–55.

Notes on the Beaker pottery of the Ipswich Museum, by J. G. D. Clark. Ib. id. 356–61.

The conclusions reached by the writer of this and the preceding paper are in agreement, though reached quite independently.

Archaeology of the Arkansas River Valley. By Warren King Moorehead. (With supplementary papers). pp. 205. Illustrations and sketch maps. *Yale University Press : London, Humphrey Milford. Price not stated.*

The illustrations depict a quantity of beautiful pottery finds in the excavations, and also figure in assiduous detail the stone implements, both chipped and polished, which were here as characteristically commingled as in many another American area. . . . Mr J. B. Thoburn writes on the prehistoric cultures of Oklahoma and makes interesting, if not always pertinent, observations on the lives and activities of the Caddoan peoples, on the possible migrations and counter-migrations which originated the so-called Canadian Culture . . . Mr F. V. Studer devotes several pages to an account of his observations in the Texas Panhandle ruins, and reproduces pictures from the wall of a rock-shelter near Folsom, New Mexico, which might well have been executed in late Palaeolithic France or Spain.

J. LESLIE MITCHELL.

Archaeological Atlas of Michigan. By Walter B. Hinsdale. *The Librarian, General Library, University of Michigan.* pp. 38 and 20 maps. 6 *dollars.*

A beautiful and almost faultless production. The preliminary pages give a brief sketch of the Michigan cultures, and a brief description of the different types of sites figured in the maps. The maps have been executed with a commendable elimination of unnecessary detail, and are as full as any archaeologist could wish.

J.L.M.

British Columbian Ancestors of the Eskimo ? By Professor Charles Hill-Tout. *Illustrated London News*, 16 January 1932.

An account of excavation in British Columbian kitchen-middens. A trephined skull, some wampum necklaces, a figurine and various stone ceremonial bowls are illustrated and described. The facts seem hardly to warrant either the headline or the hypothesis, and the 2500 years assigned to the deposits might well be cut in

half. The dolichocephalic pre-Salish autochthones appear to have absorbed considerable elements from an intrusive culture—or were themselves intrusive Californians, rather than ancestors of a people so remote in space and time as the Eskimo. J.L.M.

Fire Worship in Britain. By T. F. G. Dexter. New Knowledge Series (no. 4). *Watts & Co.*, 1931. pp. 47. 1*s*.

It is unfortunate that Dr Dexter's very readable little work should appear under such unpropitious auspices. The verbiage of the prefatory ' Synopsis of Series ' savours less of ' new knowledge ' than of certain theorizings, unacceptable to most working anthropologists, and decidedly stale. A certain flavour of ' Easterners ' (together with irrelevant illustrations) is, moreover, detectable in the text. The attitude of the early Church to Pagan festivals and deities, however, is well drawn.

It was indeed ' the policy of conciliation and incorporation pursued by the early Church ' that conserved the material of Dr Dexter's study. Among the illustrations are several amusing reproductions from old prints of May Day, Midsummer and Twelfth Night festivities. J.G.D.C.

Archivo de prehistoria levantina (Annuario del servicio de investigacion prehistorica de la excma. Diputacion provincial de Valencia). Vol. 1, 1928. pp. 262, with 54 plates and numerous illustrations in the text. Price not stated.

This first volume is a handsome production that does credit to the ' Servicio de investigacion prehistorica ' of Valencia, and is in every way worthy of the excellent series of papers it contains ; indeed, if this new journal appears with reasonable punctuality and maintains its present high standard in the matter of printing and illustrations, then the 'machinery' of Spanish archaeology will be very considerably improved, and we shall all be correspondingly grateful to the enterprise of the Director, Sr. Ballester, and his colleagues. In this volume the most important paper is the description of the Iberian town ' La Bastida ', which is illustrated by a plan and no less than 20 plates, and next to it we may rank a study by Professor Bosch-Gimpera of the affinities between Greek and Iberian art. There is also an extremely interesting article by Sr. Primitivo Gomez that gives us a remarkable survey of Iberian prehistory, and posits an unidentified and native ' Culture of the Plains ' as intermediary between the upland Megalithic Culture and the Iberian Culture proper, thus filling a gap that is otherwise unaccountable. Some novel figures showing how dolmens were built add to the value of the paper, which is entitled ' Un " Hiatus " prehistorico '. Other articles deal with earlier periods ; the 'aeneolithic' is well represented both in antiquities and skeletal material (note especially the sepulchral site of Cami Real), and there is also an account by Abbé Breuil of a Le Moustier industry (roughish quartzite implements) found by him near Mineteda. Notes, reviews of books, and a really good index complete the volume. T. D. KENDRICK.

Reviews

EARLY MAN IN NORTH-EAST YORKSHIRE. *By* FRANK ELGEE. *Printed for the author by John Bellows, Gloucester*, 1930. *pp.* XVI, 259, *with* 29 *plates*, 67 *figs. and maps*. 25*s*.

In 1927 we spent a holiday in northeast Yorkshire. It was a complete failure, partly by reason of the weather and unsuitable lodgings, but largely on account of the lack of any good guide to the archaeological features of the district. How different things might have been if Mr Elgee's book had been in our hands then ! It would have completely supplied the need, though nothing could have remedied the weather.

This book is the result of many years, not only of patient research into the doings of former antiquaries, and of classifying museum material all over the north of England, but more particularly of careful field-work performed by one who knows and loves every detail of the countryside with which he deals. The author is an enthusiast in the best sense of that term, but his enthusiasm is controlled by common sense which is the essence of scientific method. These two qualities, together with the necessary knowledge which he possesses, combine to give his book a freshness and human interest that is lacking in so many otherwise well written works.

It is a great discredit to the reading public that such excellent topographical studies as this should have to be printed at the author's own risk, presumably on the publishers' plea that dealing with a limited area the book must be of ' merely local interest '. When will publishers realize that lessons learnt in one area are generally applicable in others ? No British archaeologist can afford to neglect such a systematic topographical study as this, for its lessons are numerous and most enlightening.

The author summarizes and analyzes a vast amount of museum material collected by earlier workers, whose work he also describes. This, together with his own field-work, forms the basis of a study which is (as it should always be) four-dimensional : the dimensions are—plane topography (two), altitude (one) and chronology (one). Thus the district is described in relation to its geological zones—plains, limestone hills, high moors, etc.—and the distribution of population in each of the periods and sub-periods is plotted with very illuminating results.

A relatively large part of the book is devoted to a study of the Bronze Age, which is not surprising in a district where barrows are numbered by tens of thousands, very many of which have been excavated. The author has most to say about the middle Bronze Age, which he calls the Urn Period, and he shows that the urn-people were the only ones who ever inhabited the high moors, and he assumes that this can only have been the result of pressure exerted by more enlightened or more fortunate races who occupied the more genial lands in the neighbourhood. This leads him to believe that the urn-people may have survived in Blackamore throughout the Iron Age and even into the Roman period. This may possibly have been so, but whether the urn *culture* survived too, is another matter. One of the most valuable features of the book is the systematic study of the distribution of this urn culture, especially in view of the scarcity

of middle Bronze Age habitation-sites in Britain. Not only does the author succeed in tracing numerous settlements marked by barrow-groups, cross-ridge dykes, walled enclosures, and irregular lynchetted cultivations, but he is even able to attribute to them one hill-fort, and a second by inference. These are all points of supreme interest. He believes that while the great chiefs were cremated and inurned in great barrows aligned beside the highways, the common herd were inhumed in large barrow-groups near the settlements. His distribution-maps of some of these groups are very suggestive, as also is the association with them of cross-ridge dykes in some instances. It suggests that our cross-ridge dykes in the south of England may possibly mark the sites of middle Bronze Age settlements also. The walled enclosures and irregular lynchetted cultivation-plots closely resemble many described on Dartmoor, and closer dating of the associated settlements by excavation will add materially to our knowledge of ancient agriculture. Finally, if the Eston Nab hill-fort is really to be ascribed to the urn period, as certainly seems to be the case, judging from the account of its excavation, then it must be the first hill-fort to be ascribed to the Bronze Age in the whole of Britain, and we shall have to revise our views which claim that all hill-forts are either Neolithic or Iron Age or later.

The author claims that modern farms are frequently found adjoining sites of settlements of the urn-people in the dales, and regards them as direct descendants. If this is the case, then the intermediate links in the chain of descent should be traceable. Many hollow-ways are found near these settlements and are claimed as contemporary. Our experience in the chalk country in the south leads us to hold the view that hollow-ways are seldom really old, and that they are usually the result of medieval pack-horse traffic. Besides, to judge from the plans some of these hollow-ways scarcely seem to form an integral part of the settlement in every case.

Among the other interesting points raised are :—the occurrence of horse in long barrows ; the arrangement of small barrow-groups in recurrent patterns—but does this justify a theory of star-worship ? ; the relegation of cist-burial to the early Bronze Age ; and the occurrence of leaf-shaped and even *petit tranchet* arrowheads with burials of the urn period.

The late Bronze and early Iron Ages and the Roman period are dealt with on equally interesting lines ; the author contends that the Brigantes were descended from the late Bronze Age invaders from Switzerland, while the Parisi were La Tène I immigrants from the Seine region in Gaul.

From the distribution of Celtic place-names he argues that during the Anglian settlement in the Wolds the fugitive Britons occupied the moors and dales. This is likely enough, but we could wish that the author had limited himself to place-names whose Celtic origin is vouched for by the English Place-Name Society's volume on the North Riding, remembering that Celtic river-names prove nothing as to distribution of population, and hill-names almost as little. The attempt to prove that the Brigantes spoke a Gaelic language is very unconvincing and might well have been omitted.

Cultivations of Celtic type have been traced in various parts. We hope that this will lead to their wider study in the north of England and Scotland. In connexion with these the author speaks of a certain hollow as ' certainly a dewpond ' (p. 218). In view of the lack of evidence that the principles governing dew-ponds were known before the 18th century, this sounds interesting—or can it be that the term is here used wrongly for a catchment-pond of some sort ?

As a whole the book is well and interestingly written, though it might perhaps have

been somewhat condensed without material loss. It is well produced and clearly printed, and the printer's errors are very few (p. 195, transpose footnotes). The illustrations, both photographs and drawings, are excellent, with two exceptions : the tiny diagrammatic map of northeast Yorkshire on p. XVI is not only inadequate, it is hopeless ; and conveys no meaning to a stranger to the district. Also the plans on p. 141 have not been drawn with a view to so much reduction ; they should have been done by an expert draftsman who knew the size to which they were to be reduced. A copious bibliography and good index complete a most praiseworthy book. E. CECIL CURWEN.

SCHACHTGRÄBER VON MYKENAI : Text (1 Theil) : Tafeln. *By* GEORG KARO. *München : F. Brückmann*, 1930. *pp.* 172, *with illustrations in text and* 175 *plates in portfolio.* 120 *marks.*

In the autumn of 1876 Heinrich Schliemann discovered the ' Shaft-graves ' within the citadel of Mycenae, the traditional burial-place of Agamemnon and his murdered companions. Schliemann's methods, even after several seasons on the traditional site of Troy, were crude, but he had the good luck to find unmistakable clues at the outset, in the shape of carved gravestones within the famous ' circle ' of erect slabs, and a built ' altar ', which had to be destroyed, unfortunately, as excavation went forward. For this stage in the work, the note-books of the Greek overseer, Stamatakis, rediscovered only recently in the Nauplia Museum, are important evidence, complementary to the recent careful re-examination of the whole site by Mr Wace and his colleagues of the British School of Archaeology at Athens. When the ' Shaft-graves ' themselves were reached, their immense wealth of equipment had to be disengaged by Schliemann and his devoted wife, almost unaided, continually interrupted, in rainy weather, confronted daily with fresh problems of extraction and conservation, and unprovided even with the most elementary kit of the modern excavator. What wonder that an answer is not now to be had to many questions suggested by fifty years of intense study and of skilled dissection of many sites which both illustrate the ' Shaft-graves ' and at the same time reveal our lack of precise information about them ? Only in graves II and V which were opened latest, was the position of individual objects noted ; and only grave VI, discovered a year later by Stamatakis, has been reassembled, as it lay, in the National Museum. Schliemann's own book, *Mycenae*, was published in 1878, and the *Mykenische Thongefässe* of Furtwängler and Loeschcke in the same year : the latter far the finest study of prehistoric pottery that had appeared at all. Then follows a curious pause, while Schliemann excavated Tiryns in 1884–5, and an increasing number of other workers were attracted into this new field of ' Mycenaean ' studies. In the nineties, Belger minutely examined the site, Reichel began to describe the museum-objects, Gillièron's electrotypes popularized a few of the most notable ; but it was long before we had even an adequate handbook to the show-cases, from their custodian Stais. Then after 1900 came the revolutionary discoveries of Sir Arthur Evans and others in Crete ; and Mycenae, no longer either immemorial or central, had to wait its turn, for sounder, but by no means adequate reasons. It was only about 1912, at the instigation of the veteran Loeschcke, that Dr Karo undertook to photograph and describe systematically the whole ' Mycenae collection ' ; and then came the War. Dr Karo's preliminary survey, already partly in type for the *Athenische Mittheilungen*, vol. XL (1915) was not completed till 1927, though by an act of ' singular liberality ' proof-sheets were transmitted to Sir Arthur Evans in 1915 (*The Shaft Graves and Beehive Tombs of Mycenae*, 1929). But it has taken another decade to bring this splendid publication to its present stage.

Naturally, with all respect to Dr Karo's text, one turns first to the plates. These could not be better. All objects which could be photographed with any useful results are represented, on full scale whenever they are not too large for the quite ample page, and each with its tomb-reference and catalogue number. Now at last we can really *quote* Mycenae. Of some quite fragmentary objects there are the skilful drawings of the elder Gillièron, and a few by the son who inherits so much of his gift. Very wisely, the well-known ' cat-dagger ' and ' lion-dagger ' with their many-coloured alloys, are only represented by photographs, and amazingly well: no tinted picture can really recall their peculiar charm.

The present instalment of text includes a brief narrative of the discovery, and a minute description of the shape and surroundings of the ' Shaft-graves ' themselves, in which good use is made of the plan and detailed observation of the British School, and a chronological perspective of this part of the site of Mycenae is attempted, very cautiously, for as Dr Karo says ' even Tiryns throws no light ' on the question how the ' Shaft-graves ' lay in relation to other buildings, and especially to earlier graves of which the remnants surround them. What is clear (p. 17) is that they mark a ' profound change ' which ' rests obviously on a different idea of duty towards the dead ', and therefore open a new period, of which they are still the only witnesses. For Dr Karo regards the ' Shaft-graves ' as predecessors of the ' Beehive graves ' which he assigns to the years about 1500 B.C. (p. 19), quoting as permissible Wace's suggestion that they mark the arrival of a new dynasty, though (he thinks) not a shift of population. Consequently the old burial place was simply disused, after six graves, or so, had been installed. After the Fall of Cnossus, about 1400 B.C., new political conditions increased the wealth and importance of Mycenae; and also the risks of power during a rule of force. To the next generations belong the new palace, the citadel wall with its ' Lion Gate ', the contemporary ' Circle ' to delimit and protect the old cemetery, and a re-erection of the original gravestones at a higher level resulting from deliberate infilling of the ' Circle '. Separate sections here deal with these ' Stelae ', including the numerous fragments recently published by Mr Heurtley (*British School Annual*, XXV, 126–46); and with the fundamental question of the arrangement of the bodies and their equipment within each grave. Dr Karo is satisfied that they lay directly on the shingle floor, and were so deposited in the first instance. This leads (p. 40) to an important note on the different view of Sir Arthur Evans (*Shaft Graves and Beehive Tombs*) that the ' Shaft-graves ' contain ' secondary burials ' of bodies removed for safety from the ' Beehives ' in the Lower Town; but detailed criticism of this view, and of the relations between Mycenaean and Cnossian art which it implies, is reserved for the second instalment of Dr Karo's text.

Of the detailed descriptive inventory, it is sufficient here to say that it supplies what we have all needed so long: an exact account of each object, under its inventory number, with measurements and references to these plates, to Schliemann's line-drawings in *Mycenae*, and to subsequent publications elsewhere. Not least important is the record of attempted ' restorations ' which on some of the most important gold work have been carried rather far. A number of photographs and drawings in the text of the inventory supplement the plates in regard to certain objects of minor importance or special descriptive interest.

The appearance of Dr Karo's own interpretation of this amazing collection will be awaited with all the greater interest, now that he has made it possible so conveniently and thoroughly to refresh our memories of the material. JOHN L. MYRES.

SEVENTY YEARS IN ARCHAEOLOGY. *By* Professor Sir FLINDERS PETRIE. *Sampson Low*, 1931. *pp.* 284, *illus.* 18*s.*

This is the autobiography of an illustrious pioneer who belongs to the heroic age of archaeology. Born in 1853 Petrie began his career in England, hiking about the country planning earthworks and stone circles. Upon this solid foundation was laid his more ambitious survey-work in Egypt, which gradually developed into excavation. It was in Egypt that his greatest work was done, demonstrating by practice and invention that archaeology has a technique of its own. Petrie was the first scientific excavator in Egypt, and he naturally collided therefore with the French archaeologists, who held (and still hold) the highest official posts. Priest and prophet are always at war, for prophets are born to vex the fat slumbers of the great, and it is their mission to gird at established institutions. Our sympathies are with the prophets; but it is well to remember that, like God, they have written all the books; we get therefore only one side of the case. In addition, allowances must always be made for the idiosyncracies of a strong character.

There are many interesting sidelights on modern Egypt and on its exploitation. The stories on pages 185, 186 and 192 are particularly illuminating, and cause us to ask whether the time has not come for the fellah to take charge of his own country. It is at any rate a fact that in every book on Egypt he always shines in contrast with the European and the effendi; and this impression is confirmed by the experience of those who know him and his land.

The book is a striking testimonial to the gospel of work, and to the reward it obtains. Some of the author's opinions are quite properly to be regarded as revolutionary, especially those given on pages 126, 133, 145, 154, and 221. They would be applauded in certain quarters with an enthusiasm that might both surprise and embarrass him.

There are two photographs of the author; though good, neither of them in our opinion is a really first-rate portrait.

The book should be read by all interested in the history of archaeology.

ANATOLIA THROUGH THE AGES: DISCOVERIES AT THE ALISHAR MOUND, 1927–29. *By* ERICH SCHMIDT. *Oriental Institute of Chicago Communications*, no. 11, 1931. *pp.* 165. 2 *dollars.*

On the archaeological map Anatolia is denoted by a virtually blank patch interposed between the ancient civilizations of Mesopotamia and the younger ones of the Aegean and the Balkans. Excavations undertaken at a few points on its western fringe have disclosed a peculiar culture, still ill-defined in time, but obviously related to the Helladic, Cycladic and Minoan civilizations in the Aegean and, more vaguely, to the Vinča, Lengyel and Danubian cultures of Central Europe. The treasures of Troy demonstrate the importance of the region at some time as a centre from which metal types were transmitted towards Europe. Yet the types in question have been directly or indirectly inspired from Mesopotamia, and in seeking the mechanism of their westward transmission we cast hungry eyes upon the Anatolian hinterland, traversed in classical times by the Persians' Royal Road to Susa. From the eastern confines of the plateau stray vases have trickled into European museums as the result of clandestine diggings or even less scientific 'tablet-hunts' by philologists. Some point to Troy and the West, others have different affinities, but, despite penetrating stylistic and technical studies by Myres,

Frankfort and de Genouillac, attempts at their classification and appreciation are left rather in the air through lack of stratigraphical data.

Even from the brief and extremely popular summary before us we can see that the American excavations at Alishar, between the imperial Hittite capital of Boghaz Keui and Kul Tepe, famed as the source of the Cappadocian tablets, will automatically coordinate such scattered fragments and define with new precision the relations between Mesopotamia and the West.

The black carboniferous wares, which from Aegean analogies we should expect at the base of every culture in this area, had only just been reached as the volume went to the press and are described in an appendix as ' Neolithic '. The ten-metre deep deposit containing them is overlaid by an accumulation of comparable thickness formed by the debris of a ' Copper Age ' town, already fortified and frequently rebuilt. Here burnished red-slip ware predominates with many forms reminiscent of Troy and Thermi. And, as there, we find perforated stone battle-axes, grooved hammer-stones so important everywhere in the history of early metallurgy, conventional fiddle-shaped idols and metal pins. The citizens, buried in huge jars, as at Yortan, were not ' Alpine ' nor ' Armenoid ', but mesaticephalic and slightly prognathous.

The ' Copper Age ' culture passes directly into that of the early Bronze Age, termed Alishar III in the body of the report. To this phase belong the well-known Cappadocian vases, still Anatolian in form but now painted with black patterns on a red ground. Lozenges are the only motives illustrated, but the forms are identical with those from Kul Tepe in the Louvre which bear the little pot-hook spiral that Dr Frankfort derives from Macedonia and calls Phrygian. This group is consequently made several centuries earlier than that author had placed it. But during this early Bronze Age, part of the site at least (' Alishar II ' in the text) was occupied by an ' Alien People ' definitely brachycephalic, and using the potter's wheel. In their settlements were found tablets of the familiar ' Cappadocian ' type, records of Semitic merchants settled in the region and trading with Assur and even Ur during the centuries round about 2000 B.C. Schmidt attributes to these Semitic colonists the advances in pottery and metallurgy that characterize his Alishar II, but von der Osten in his appendix identifies the Alien People with the Hittites of the ' Early Empire ' which lasted till about 1650 B.C. He notes that the pottery types introduced by the ' Aliens ' are not Mesopotamian (the metal types on the other hand are) ; nor are they European, but Anatolian or North Syrian with Minoan affinities (metallic-looking spouted pots and goblets with crinkled rims). In any case the Aliens may be held responsible for an intensified activity in metallurgy, and significantly enough we find in their settlement many types familiar at Troy and further west : thus there are lead idols like the well-known specimen from Troy II ; a vase with a figure in relief on its walls forms a link between an almost identical sherd from Csoka in Hungary and others from Assur ; mysterious flat ' cakes ' of clay in the form of segments of a circle pierced at either end were apparently common. Siret has found just such objects on Copper Age sites in the metalliferous regions of southeastern Spain and has proposed to reconstruct a primitive reverberatory furnace out of them. It really looks as if the activities of the civilized aliens in Cappadocia may have had repercussions far afield in Europe. With the aid of Hittite and Assyrian records Alishar II should be precisely datable, and in turn assist an accurate dating of the European Bronze Age. At the moment its chronological limits are not clear. Alishar IV, which eventually replaces it, should coincide with the New Hittite Empire, 1400–1200 B.C., and witnesses apparently the rise of iron-working and the adoption of the fibula in an

advanced form—too advanced it would seem for 1200 B.C. Yet the upper limit 1400 leaves an uncomfortable gap between the Cappadocian tablets in Alishar II. For the resolution of such ambiguities we must await the completion of the excavation and its final publication. It has nevertheless seemed worth while even now to signalize the possibilities implicit in the work in progress. V. GORDON CHILDE.

DIE AUSGRABUNGEN VON SAMARRA, band V: Die Vorgeschichtlichen Topfereien von Samarra. *By* ERNST HERZFELD. *Berlin : Verlag Dietrich Reimer–Ernst Vohsen*, 1930. *pp.* VII, 110, 240 *text-figures and* 47 *plates.* £5 5*s.*

With a wealth of figures and collotype plates, six of which are coloured, the early pottery found at Samarra is here published. The late Dr Hall (*Journal of the Royal Asiatic Society, Centenary Supplement*, 112) and the present reviewer (*Studies in Early Pottery of the Near East*, I, 60 ff) had in 1924 assigned this fabric to its proper context amongst the homologues of Susa I and Al Ubaid. Their conclusions are now adopted by Professor Herzfeld, who does not deem it necessary however to refer either to the earlier research on the subject or to the divergent view published by the head of the Samarra expedition, Professor Sarre (*Der Islam*, V, 190 ff), which was based on an interpretation of certain imported North Syrian sherds as Aegean. In the case of these Professor Herzfeld agains endorses without mentioning it the more correct suggestion made before.

The conditions under which this very remarkable pottery was found are now for the first time fully published. It derives from a cemetery which occupied a layer of earth of 1.50 m. thickness, wedged in between virgin soil and Arab houses of the 9th century A.D., which were found immediately above the graves of the fourth millennium B.C. To this circumstance is due the occurrence of a square peg of non-meteoric iron in one of the graves, and of some Arab glass in another. The graves were sometimes lined with sun-dried mud-brick or with stamped mud. Their orientation was not uniform. The bodies were found lying on the back and extended, as at Ur in the Al Ubaid period, but different, apparently, from the usage at Susa : there people were buried in the crouched position. Some simple alabaster cups were found, and beads of limestone, turquoise, carnelian, and shell ; in one case there were more than 3500 beads in one grave so that Herzfeld thinks of a beadwork cover for the whole body. A globular stone macehead and some microlithic implements were also found.

Important is the occurrence, furthermore, of some small copper tools and of some bowls of hammered sheet-copper. The vast majority of the finds consists of painted pots. The shapes are more primitive than those from Al Ubaid ; there are no bases, rims or handles. Shapes and designs take an intermediate position between Susa I and Al Ubaid, and are parallel with Tepe Khazineh, near Tepe Musyan ; but the rich variety of all these early wares gives a character of its own to the fabric of each site within a more or less greater province of homogeneous culture. Unequalled elsewhere is the bowl-and-stand made in one piece, which recalls similar vases known in the early dynastic Sumerian period from Assur H and G, and from Kish and Ur ; but it is impossible to say, and perhaps improbable, that there is any real connexion or continuity, as we cannot trace this type of vessel through the intervening Uruk and Jemdet Nasr periods.

The exceptionally interesting designs of the vases are, often from minute fragments, restored in excellent drawings ; and we see radial compositions in the bowls showing women with flowing hair; and scorpions, birds and fishes; and tête-bêche groupings of goats, all combined with purely geometrical motives. Professor Herzfeld's comparisons

of his discoveries with those of others fall far short of what one has a right to expect on the strength of the list of literature given in a note to the introduction. They remain vague, and limited in scope. Important however are a number of incidental remarks on pottery picked up in Northern Persia and at Nehavend, and at Persepolis; some specimens are shown on the plates. A publication of this material, in a less beautiful and therefore less costly form, would be a great service which Professor Herzfeld could render to science without much trouble. For this material bears directly on the problems connected with the earliest civilization of Mesopotamia as we shall endeavour to show elsewhere.

H. FRANKFORT.

THE TEMPLE OF THE TOOTH IN KANDY. *By* A. M. HOCART. *Memoirs of the Archaeological Survey of Ceylon*, vol. IV. *Luzac and Co.*, 1931.

This is a most valuable contribution to the archaeology of Ceylon. It also has great significance for all anthropologists. Mr Hocart says in his preface: 'a temple is merely a receptacle for worship, and can therefore only be properly understood in the light of the ritual that goes on inside. To neglect our opportunity of acquainting ourselves with that ritual is like studying molluscs solely from their shells'. The archaeological survey of the temple is illustrated by detailed drawings and well reproduced photographs, and its ceremonies and personnel are equally well dealt with. Here at last is set down southern Buddhism as it *is*, not as it is supposed to be in various texts of mixed origin and authenticity. Indian architecture and sculpture will only begin to be understood when comparable work is done for the great temples in the South, the Deccan, Gujarat and Orissa. Living tradition is clearly better, as a guide to real understanding, than contradictory texts, which are difficult to date and locate.

Mr Hocart's retirement is a great loss to the Archaeological Survey of Ceylon. It is to be hoped that the tradition he has built up will be maintained.

K. DE B. CODRINGTON.

THE KADAMBA KULA. *By* GEORGE MORAES. *Studies on Indian History of the Indian Historical Research Institute. St. Xavier's College, Bombay.* No. 5. *Bombay: B. X. Furtado and Sons.* [*London agents, Luzac and Co.*] 1931. 25*s.*

Father Heras introduces this volume and as Director of the Institute he may well be proud of it. In a country as big as India generalizations of any kind are dangerous. Vincent Smith compiled the first sequent history of India, but his single volume is necessarily full of generalizations. The time is now ripe for a series of dynastic monographs which will provide the detailed structure for another general history. The lack of such works as this is the direct cause of the unsatisfactory looseness and one-sidedness of the recently issued volume of the Cambridge History. The Institute, Father Heras and the author are to be congratulated upon pioneer work in what is virtually a new field. The geographical basis of the work is especially welcome.

K. DE B. CODRINGTON.

A HOARD OF BRONZE IMPLEMENTS FROM DONHEAD ST. MARY AND A STONE MOULD FROM BULFORD, IN FARNHAM MUSEUM, DORSET. *By* A. D. PASSMORE. *Wilts Arch. Mag.* June 1931, XLV, 373–6, 3 *plates.*

Students of the late Bronze Age and its many intriguing problems of trade and invasion will welcome this detailed description of a hoard found 36 years ago in a remote

part of Wiltshire. General Pitt-Rivers, who acquired it, visited the spot and found a piece of coiled bronze wire overlooked by the finders ; but he died before he was able to publish any account of it (as surely he would have done). Our thanks are due to Mr Passmore for thus making it known as it deserves. The hoard consists of 8 winged palstaves of the type whose European distribution is shown by the map in ANTIQUITY (IV, 159, illustrating a paper on 'The Sword Bearers' by Mr Estyn Evans). It also included other objects, amongst them being a mould for a straight-edged socketed axe. We take this opportunity of calling attention to a later article by Mr Evans (published in MAN, XXXI, 208) where the same map is published again, and where an attempt is made to run these late Bronze Age invaders to earth in their Central European lair.

AN INTRODUCTION TO PHYSICAL ANTHROPOLOGY. *By* E. P. STIBBE. *Edward Arnold*, 1930. *pp.* VI, 200, *with illustrations and one coloured map.* 12*s* 6*d.*

This book states that it is meant for students who intend to take a degree in the University of London, and follows the syllabus. His intention apparently forces the author to write something which reads very like the sort of note-book that a first-rate student would make if he attended and understood all the lectures and demonstrations given during the course. Such a work would be of great value to such a student, representing as it does the digestion and tabulation of things heard, seen, and done in the laboratory and lecture room, and would serve as a mnemonic for examination purposes or as a convenient abridgment of necessary facts for future reference. But it is hard to see the value of the book to one who has not heard the lectures, seen the demonstrations, and worked in the laboratory or field. None of the material is really intelligible to the man who has not handled or studied specimens for himself, and in the very nature of the subject-matter could hardly be so. The facts in the book are sound enough, no doubt, but they mean little to the man who has not actually gone through the work represented and found them out for himself. If he cannot do such work, he had better leave the subject alone, for it is decidedly one for the specialist, and not one which a man can work up in a library.

T. K. PENNIMAN.

A SHORT COURSE ON PHYSICAL ANTHROPOLOGY. *By* M. R. DRENNAN. *Cape Town* : *Mercantile Press. pp.* 60 *and numerous illustrations, unbound.* 5*s* 6*d.*

This little book is intended for the use of the medical student and graduate in South Africa, and for this reason a large amount of space is given to a discussion of the races of that region. Considerable use is made of leaded type and the general arrangement rather suggests that the book is meant for those who study anthropology for a specific purpose, such as perhaps an examination, than as a scientific pursuit. This is a pity as it has undoubtedly cramped the author, whose work on the anthropology of South Africa is well known. At present unfortunately there is by no means a universal agreement as to the method by which anthropological measurements should be made. The author however gives no critical discussion of method and in some cases suggests methods which many anthropologists, even in this country, do not use. In the case of the living he does not even define the majority of the measurements suggested. It is probable that these deficiencies are due chiefly to the extreme compression from which the book has suffered and it is to be hoped that the 'short course' will be expanded into a critical discussion of the methods and problems which his space here only allows him to state dogmatically.

L. H. DUDLEY BUXTON.

SCOTTISH PLACE-NAMES. *By* W. C. Mackenzie. *London: Kegan Paul, Trench, Trubner and Co.*, 1931. *pp.* 320. 15*s.*

This is the first book to deal with the subject in general since the publication in 1892 of the Rev. J. B. Johnston's *Place-Names of Scotland.* In the interval a few works on individual counties or special areas have appeared and the Celtic element in particular has been very thoroughly investigated by Professor Watson. The Norse side has been dealt with in some of the papers of the late Dr MacBain, but no serious discussion of the English names has as yet been attempted by any competent scholar.

Mr Mackenzie's book is not a mere index of names. It consists of a series of chapters in which the names are grouped topographically under the various headings of hills, islands, lochs and habitations, etc., and in conclusion the much-discussed Pictish question is again brought forward, though without any definite further result. At the end of each chapter the more important or interesting names occurring in the text are discussed at greater length with their early spellings, though, owing presumably to lack of space, the author has in most cases omitted to state the sources from which his material has been extracted.

It is perhaps a pity that Mr Mackenzie did not find space also for a chapter dealing with the proportion of names of Gaelic, British, Norse and English origin in the different counties, and illustrated by one or more maps. From a superficial examination of the book it would appear that English names are confined chiefly to the southeast, though isolated examples occur elsewhere due to the gradual spread of the language in the course of centuries. As in England there are a few interesting cases of corruptions or of folk-etymology, *e.g.* Oxton for original *Ulfkilston* and Channelkirk for earlier *Childenekirk.* It is doubtful if Hassendean stands for 'Alstone's *dean* or wooded valley'. Other early spellings from the Melrose cartulary are *Hatstanesden, Hadestandena.* Jedburgh no doubt contains a river-name as first element but this is unlikely to be of Norse origin. Corstorphine may contain a hill-name as second element but the interpretation 'Thorfin's cross', which has been put forward by other scholars, seems more likely.

Norse names occur chiefly in the islands and in Caithness and Sutherland and on the western mainland from Cape Wrath to Solway. The Beauly Firth was formerly thought to be their southernmost limit on the east coast, but the author notes that Moorfoot in Lothian was *Morthwait* in the 12th century. In the west the Norse names have been much corrupted through Gaelic influence, *vik*, 'bay', commonly appearing as *-aig*, and *fjqrör*, 'fiord', as *-ord*, *-ort* and *-art*. It is doubtful if Reay and the first syllable of Caithness are to be taken as Norse. The former is more likely to be connected with the Gaelic *ràth*, 'fort', and the latter is no doubt a tribal name from the Gaelic *cat*, 'cat'. On the other hand the first element of Grumbeg, earlier *Gnowb*, is clearly Scandinavian from ON *gnúpr* 'peak', 'summit'. Kirkwall is rightly explained as 'church bay' but the author is hardly correct in stating that 'it is phonetically impossible for *vagr* to become *wall*'; for a similar phonetic development is evidenced in many English place-names.

As in England, names of French origin are rare except in one or two instances of abbeys of medieval foundation. Montrose is *Munros* a.1200 containing the Gaelic *monadh*, 'hill'. A few Norman-French personal names occur as first elements of place-names, usually with the OE suffix *tun.*

The number of places containing a saint's name are very numerous but probably not more so than in Cornwall and other Celtic areas. A note on the distribution of place-names in *Kil-* and *Kirk-* would have been of interest.

Of Celtic names perhaps too large a number have been assigned to Gaelic rather than to Pictish or British origin, but the whole subject, as shown in Professor Watson's book, is one of great difficulty. The Pictish element is naturally strongest in eastern Scotland north of the Forth, and the British element in south Scotland including Lothian. It is clear from the evidence of early records that in many cases Pictish names have been ousted by later Gaelic ones. *Baile*, for example, has been substituted for *Pit* in many instances.

In Scotland, much more than is the case in England, one would look for a certain number of pre-Celtic names, especially among the names of rivers and larger islands. Rum and Mull have been cited as examples by some writers, but Mr Mackenzie would prefer Gaelic origin even for these. Intensive study of the place-names of individual counties may yet bring to light more names of very ancient origin.

Taking into account the size of the book and the size of the area which it covers, the number of interesting and well-known names which have been brought together is surprisingly large. At the same time it is clear that many difficult problems must remain unsolved until the toponomy of Scotland has been investigated, county by county, after the same thorough fashion as that adopted by the English Place-Name Society for the Survey of English Place-Names. J. E. GOVER.

DIE JUNGNEOLITHISCHEN KULTUREN IN WESTDEUTSCHLAND. *By* R. STAMPFUSS. Vol. II of the Rheinische Siedlungsgeschichte. *Ludwig Rohrscheid, Bonn,* 1929. *pp.* 229 *with* 44 *illustrations in text, together with an album of* 14 *plates.* 25 R.M. *paper cover* ; 30 R.M. *bound.*

If unfortunately many of the prehistoric cultures of the mainland have reached this island in an attenuated and poorer form, we have at least in the beaker-culture a brilliant exception to the general rule, an exception which we owe to our position opposite the mouths of the Rhine. The virility and wealth of variety present in the beaker-culture of Britain is due to the fact that our invaders took off from that veritable Babel of beaker-folk, the lower reaches of the Rhine. Dr Stampfuss treats with great clarity of the main beaker-cultures of the Rhine area, distinguishing the Corded beaker-folk with their amphorae and facetted battle axes, the single grave-folk of the first two phases, the bell-beaker intruders, and finally the ' Zonenbecher ' group representing a fusion of the corded and bell-beaker cultures. It is the description of the formation of this last group in the Rhine Valley, its progress down the river, and its contacts with the westernmost extensions of the Single Grave-folk in the Low Countries before setting out to our shores that will prove of greatest interest to the average English reader. Points of detail of especial domestic interest are comparisons between individual beakers from Britain and the Continent *e.g.* the Beakers from Felixstowe (Aberc. 86) and Exloo (illustrated ANTIQUITY, December 1931, V, 415). An interesting illustration (no. 22) compares the profiles in section of selected British and Rhenish beakers, revealing for instance that the bevelled lip, thought by some to be peculiarly English, and the raised rib ornament on the neck are both found on pots from the Rhine and the Netherlands. Another interesting fact is that the makers of the ' Zonenbecher ' had on the Continent a pleasant habit of polishing their flint knives (p. 86).

Stampfuss insists that the bell-beaker complex of the Rhineland is quite distinct from the other beaker-making cultures in the area, and secondly that the Palatinate group is the earliest in Central Europe. He accepts the Iberian origin of the bell-beaker,

and by implication the independent origin of the Cord-Single-Grave group since the bell-beaker only reached the Rhine in stage 2 of the Schnurkeramik.

Stampfuss makes good use of the geographical method as well as of the typological, mapping both different types of pot and typical associated objects, thus showing up well the zones of the various groups, areas of fusion and so on. He also gives us a chapter on methods of burial, and another on the beaker-cultures as the foundation of the early Bronze Age. The album of plates covers a large number of specimens in the manner of Abercromby. Finally one must mention the very complete indices as models of their kind. This is a book essential to the student of the British beaker-culture for its treatment of origins. The remarks on the British pottery itself, which the author has not examined at first hand, are not very valuable. J. G. D. CLARK.

OFFA'S DYKE: A FIELD SURVEY. SIXTH REPORT: OFFA'S DYKE IN THE WYE VALLEY. *By* CYRIL FOX *and* D. W. PHILLIPS. *Archaeologia Cambrensis* June 1931, LXXXVI, separate pagination.

With this report the Director of the National Museum of Wales and his collaborator conclude the most important survey yet carried out in this country of a typical 'linear earthwork'. Indeed, if we leave out of account the work done on such complex affairs as the Roman limites, this survey of Offa's dyke is the most careful and complete of its kind ever carried out anywhere. We wish that similar surveys could be made of some of the German, Transylvanian and Roumanian boundary dykes, to which Sir James Berry called attention twelve years ago (*Geographical Journal*, March 1919, pp. 129–52); as well as of the mysterious 'Median Wall' in the Tigris Valley, the Sadd-i-Sikandar near Astarabad, and the Merv rampart near Tejend in Turkmenistan. But in the absence of any large-scale maps, such as is provided here by the 25 inch to the mile Ordnance Survey Maps, any such attempt would only be preliminary. (We mention the above examples in the hope that some reader, contemplating a holiday tramp abroad, may turn his attention to them).

There are still of course fields to conquer at home. Watt's Dyke badly needs similar treatment, and Dr Fox is providing it. And there are many others, like the Scots Dyke and the Roman Rig in Yorkshire, which we intend to tackle ourselves (on the 6 inch scale) if no one else will.

In the course of the survey Dr Fox has made many new and valuable discoveries, such as the relation between the alignment of Offa's Dyke and the nature of the vegetation at the time of its construction. It would be a boon to all investigators if he would republish these reports in book form. In the hope that he may do so we have postponed anything of the nature of a full summary or review of the parts as they have appeared.

O.G.S.C.

THE 'SANCTUARY' ON OVERTON HILL, NEAR AVEBURY. *By* M. E. CUNNINGTON; being an account of excavations carried out by Mr and Mrs B. H. Cunnington in 1930. *Wilts Arch. Mag.* June 1931, XLV, 300–35. *Ten plates, including 2 large plans.*

The *Wiltshire Archaeological and Natural History Magazine* occupies a very high place amongst county archaeological journals, just as Wiltshire has more important prehistoric sites (one might almost add, more archaeologists) than any other English county. No student of British prehistory can afford to miss reading each issue of the magazine, for it is sure to contain something of general importance. It is not perhaps

easily accessible except to members, but that is a good reason for joining the Wiltshire Archaeological Society whose headquarters are at the Devizes Museum (annual subscription 15*s* 6*d*, entrance fee 10*s* 6*d*). We make no apology for drawing the attention of our readers to the Society, particularly of librarians at home and abroad, for it has behind it a long record of brilliant work, and the present number gives promise of an equally distinguished future ahead of it.

The outstanding feature of the present number is the account of Mr and Mrs Cunnington's excavation of a composite circle of stone and wooden pillars at the east end of the Avebury Avenue. The exact site of this monument had been forgotten, though it was recorded approximately on the Ordnance Maps. It was rediscovered by trenching, and the stone- and post-holes cleaned out. We do not propose to attempt to give any summary of the results (one of which was described in ANTIQUITY, 1930, v, 233–4, by Mrs Cunnington). They are admirably described and discussed in the present paper, which is illustrated not only by photographs and drawings (by Mr Gurd, who now needs no introduction to archaeologists) but also by two splendid plans in colour. Comparisons are odious and we refrain from the temptation to make them; but we will say that we in this part of England do these things better, from A to Z, than others.

EASTON DOWN, WINTERSLOW, S. WILTS; FLINT-MINE EXCAVATION, 1930. *By* J. F. S. STONE, B.A., D.PH. *Wilts Arch. Mag.* June 1931, XLV, 358–65, *plan and* 8 *plates.*

Flint mines have been discovered on the Sussex Downs, at the southern end of the Chilterns near Rotherfield Peppard, and near Brandon in Norfolk (Grimes Graves). Hitherto none has been known in Wessex, and it was always a puzzle why not. Dr Stone has provided the answer. They existed, but none of the rest of us who have tramped the downs had been lucky enough to spot them. To have discovered them, excavated two shafts completely with one's own hands, and then to have written and illustrated this concise and admirable report is a feat which speaks for itself. Dr Stone leans strongly to the hypothesis (soon probably to become an established fact) that the shafts are of Beaker age, quoting Sussex evidence in support (apart from evidence on the spot). With regard to the types of flint implements found he states that 'the site has yielded a great variety of types, which if taken singly could be ranged over a considerable period of time'. He concludes that 'form alone is an unreliable criterion of age'. We agree of course with his opinion, but we fancy that most flint-experts would also. Surely nowadays single *isolated* specimens are not dogmatically assigned to any given period of limited duration?

A SETTLEMENT SITE OF THE BEAKER PERIOD ON EASTON DOWN, WINTERSLOW, S. WILTS. *By* J. F. S. STONE, B.A., D. PHIL. *Wilts Arch. Mag.* June 1931, XLV, 366–72, 4 *plates.*

Dr Stone discovered and excavated with his own hands this, the first 'pure' beaker habitation-site to be discovered in Wessex. It occupies the same piece of downland as the flint-mines (*see* above); remains of any other period are negligible; and there seems no reasonable doubt that the shallow pits he cleared out were the homes, perhaps seasonal, of the miners. The article is illustrated by excellent drawings and plans, made by the writer himself; and though this is merely a preliminary report the site is of more than merely local importance. O.G.S.C.

DER TELL HALAF: eine neue Kultur im ältesten Mesopotamien. *By* MAX VON OPPENHEIM. *Leipzig: Brockhaus*, 1931. 14 *marks*.

Baron von Oppenheim has here given us an interesting account of the important excavations he has been carrying on since 1911 at Tell Halaf, east of Harran, on the banks of the upper Khabur. They have brought to light a large number of monuments and other remains which have revealed to us a new phase of art and civilization in ancient Mesopotamia. The earlier remains go back to the Aeneolithic period of Mesopotamian history, the age of the so-called painted pottery which has been found in Elam and Babylonia as well as in Assyria and Mesopotamia, Northern Syria and Eastern Asia Minor, and is coeval with the first two periods of Susian ceramics.

At Tell Halaf a remarkable series of sculptured stone monuments associated with the painted pottery has been discovered. In an appendix Prof. Herzfeld divides them into three periods, period I being further subdivided into Ia and Ib, extending from about 3300 B.C. to the age of Naram-Sin (2500 B.C.). Most of them are of basalt, but calcite was also used in period I. In period III the advance in art is very marked.

The preservation of the monuments is due to their having been reused when the city which had long lain waste was restored by the Aramaic prince Kapara, son of Khadiann, 'King of the land of Pa-lit(?)-ema' about 1200 B.C. His palace and temple were adorned with the statues and reliefs of the earlier epoch, though unfortunately many of them had been broken and the reliefs were embedded in the walls of the new buildings with little regard to their relationship to each other. Among the most striking are the three colossal figures of divinities standing on animals whom Baron von Oppenheim would identify with Tessub (on his ox), the Sun-god and the goddess Kheba on lions, the figure of a sphinx being stationed on either side of them. They belong to Prof. Herzfeld's period III rather than to the age of Kapara who re-erected them in the great northern façade of his palace.

Another valuable appendix on the pottery is contributed by Prof. Hubert Schmidt and among the numerous photographic plates contained in the book are two in colours depicting the typical potsherds of the prehistoric epoch. The latter will be specially appreciated by the archaeologist who is too often handicapped in his study of ancient pottery by being forced to depend on a description of its colouring in more or less ambiguous words. Prof. Schmidt draws attention to the fact that on some of the potsherds there is the picture of a horse, and notes that there are other indications of the use of the horse in Northern Syria in early days for the purpose of riding as well as of drawing a car.

The pottery of Tell Halaf exhibits a more advanced art than the sculpture. This latter in its early phases indicates a connexion with the art of early Sumer, but it soon developed on lines of its own and I am inclined to think that a good deal which is ascribed to an early date is really due to the imperfections of the provincial sculptor. On the other hand we can trace in it the origins of the so-called Hittite sculpture, so many examples of which have been discovered at Carchemish and which I should prefer to call Early North Syrian. One of its characteristics is its fondness for composite figures, partly human and partly animal, the best-known western example of which was the Chimaera. It is also distinguished by its indebtedness to the Gilgames cycle, which raises the question whether the latter really had its origin in Sumer and not rather in Northern Mesopotamia. On the one hand the seal-cylinders which represent the heroes of the cycle go back to an earlier epoch in Babylonia and Elam than anything yet found at Tell Halaf or the

neighbouring Jebelet el-Beda ; on the other hand it is difficult to explain the name of Gilgames from the Sumerian vocabulary. The bilingual vocabularies it must be remembered, as I have long since pointed out, contain many words of non-Sumerian or pre-Sumerian origin which accounts for the large number of apparently Sumerian synonyms recorded in them.

The inhabitants of Tell Halaf were not a literary people, and accordingly no inscriptions have been found earlier than the reign of Kapara. Naturally when it became the capital of the Assyrian province of Guzana there was a change and a good many Assyrian and Aramaic tablets have been discovered. The Aramaic tablets are interesting as they illustrate the adaptation of the Phoenician alphabet which was intended for papyrus or leather to clay. Prof. Meissner has found among the tablets only one small literary fragment, which reproduces an exorcism ; the rest are of a commercial or official character. It may be remembered that one of the inscriptions of Kapara was to be seen in the British Museum for several years after the war. A. H. Sayce.

THE STONE AGE CULTURES OF KENYA COLONY. *By* L. S. B. Leakey. *Cambridge University Press*, 1931. *pp.* 283, 47 *figures*, 21 *plates and* 2 *maps*. 25*s*.

In the recent marked turn of archaeological attention to Africa the researches of Dr L. S. B. Leakey have been directive in no small measure, and it is safe to say that they will proceed to make a similar call by future continuation. In the volume under review its author provides, with admirable clearness, a survey of the results of two seasons' excavations by the East African Archaeological Expedition (1926–7 and 1928–9). As may be anticipated from the title, Dr Leakey deals especially with Stone Age cultures and sub-cultures of which he describes no less than fifteen ; but in addition he has important chapters on climatic changes and on the Pleistocene fauna ; while the human remains are considered together with their associated cultures. There are seven appendices dealing with geology (by J. D. Solomon), pluvial periods (C. E. P. Brooks), fossil mammalia (A. T. Hopwood), mollusca (M. Connolly), a reprint of Professor Gregory's chapter on ' Prehistoric Man ' extracted, with its author's sanction, from *The Rift Valleys and Geology of East Africa*, beads (H. C. Beck), and an undated extract from the *East African Standard* dealing with the discovery of the Nakuru burial site (J. A. Macdonald). The book is all the more useful to the general reader because it achieves the purpose of an excellent outline, and we are promised the publication of specialist subjects, such as a detailed discussion of the human remains, in later works.

Palaeontological evidence for dating purposes is seriously lacking at present in Kenya, for nearly all the remains discovered are those of living species, but past periods of heavy rainfall (pluvial periods) are hypothetically equated with the Günz-Mindel and the Riss-Würm glaciations of European nomenclature, as was done with the first and second pluvials of Uganda, and with the Bühl and Sub-Atlantic phases of the higher northern latitudes—a tentative correlation by no means unjustified and one likely to receive support from further work. As in Uganda, so in Kenya, it would appear that the second major pluvial (the Gamblian) displays two maxima separated by a relatively dry spell, and in both countries Pleistocene time is punctuated by earth movement which has played a great part in moulding the topography of Eastern Central Africa, and is of peculiar significance within a great circle of country centrally occupied by Lake Victoria and bordered by the rift valleys. According to Solomon, the dry period between the first and second major pluvials was one of great volcanicity and earth

movement manifested by faulting. In Uganda, however, the great period of rift valley expression was that of the decline of the second pluvial, or during the dry period succeeding it. Dr Leakey's declaration, on page 14, to the effect that major post-pluvial wet periods are unrepresented in the Albert basin is not in accordance with fact, nor, as a perusal of the publications of the geological survey of Uganda will show, is it true that, as Mr Solomon states (p. 263), the Gamblian pluvial ' is unrepresented in the Victoria and Albert basins owing to the presence of an outlet '. Deposits of this age have long been known in both basins, and they were dealt with by the present writer in a lecture to the Geologists' Association in 1929. It is to be noted, too, that the red beds of Gamble's cave, originally held by Leakey in his earlier writings to be silt, are now regarded as ' clear evidence of . . . aridity ', but the reasons for this change of view are not stated. On page 263, Mr Solomon enumerates a succession of geological events bound up with the prehistory of the area, and he commences with a ' wet period during which the peneplanation of Uganda was completed and which coincided with the epoch of the man who made the pebble-tools (Kafuan) '. In point of fact there are three of these erosion-cut surfaces, and the last of them (Peneplain III) was, for all practical purposes, as advanced when Kafuan man made his first appearance as it is today.

While the pluvial sequences of Kenya and Uganda are found to agree in all essentials, there appear to be some differences between the contemporaneous cultures of these two areas.

Tools of Chellean and Acheulean facies are found in beds belonging to the decline of the first (Kamasian) pluvial.

A culture of uncertain age in Kenya is the Nanyukian, ' a very advanced development of the Kenya Acheulean with a very marked tendency to a very early Mousterian type '. The Nanyukian is presumed to belong to the dry period between the Kamasian, and Gamblian pluvials. In Uganda, however, a similar culture has been discovered in beds interpreted as mid-pluvial 2 (middle Gamblian) in date, while some 16 feet below it a ' digging stone ' made from a lump of phyllite has been found *in situ*, suggesting the presence of Neanthropic man in early Gamblian times.

Leakey shows that in Kenya, industries of Mousterian and Aurignacian facies develop side by side throughout the Gamblian, and that so far as the evidence goes they are not intermixed, but owing to the restricted area as yet investigated, it cannot be maintained, as suggested on page 31, that this is a proved fact, except for the area in question.

To the decline of the Gamblian belong the Kenya late Aurignacian and an industry closely resembling the Still Bay culture ; while in the Makalian wet phase (supposedly of Bühl times) we have the Elementeitan culture, a Mesolithic industry comprising long two-edged blades, backed-blades, microliths and lunates, scrapers, lames écaillées, burins (rare), bone tools and pottery. Leakey points out that there is a big hiatus between the Elementeitan and the Upper Kenya Aurignacian, but it would appear that this gap is more or less bridgeable both typologically and chronologically in Uganda by an industry known as the Magosian. It is very interesting to find that in Kenya, as in South Africa, certain ' points ', somewhat reminiscent of the Solutrean 'laurel leaf', resulted from contact between flake-using folk, and those whose culture, so far as stone artifacts are concerned, was largely characterized by the blade and burin.

Succeeding the Kenya Wilton, which belongs to a stage in the decline of the Makalian, neolithic remains are found. In addition to three main types of tools, backed-blades, lunates and scrapers, the two industries so far discovered (Gumban A and B and the

Njoran) are represented by beads, stone bowls, stone pestles and mortars, stone saucers, querns, pottery and some polished axes (Njoran). While referring to the Gumban deposits of Nakuru it may be mentioned that it is hardly right to say (p. 200) that Major Macdonald described the white powdery earth found therein as ' Fuller's earth ' ; he spoke of it as ' interstitial dust . . . of fine division as Fuller's earth ' (p. 283), a much less committal statement. The potter's art, like that of the manufacture of microliths, is a very ancient one in East Africa, for it makes its first known appearance in the Upper Kenya Aurignacian, which culture, if the Glacio-pluvial correlation is correct, must have been in existence in early Riss times. One of the most surprising facts brought to light by Leakey is the early appearance of non-negro Neanthropic man. His remains have been recovered from Upper Aurignacian, Elementeitan and Neolithic (Gumban A and Gumban B) horizons ; and Reck's discovery in the Oldoway gorge (Tanganyika Territory) of a similar type of man of Kamasian days is now confirmed by Leakey, contrary to his expectation as expressed on page 16.*

Were it not that space forbids, a good deal more might well be said about the problems solved and raised by this interesting book which, it may be added, is of convenient size, though perhaps a trifle heavy, and very well illustrated by photographs and drawings ; the former are excellent, and no better guarantee of the accuracy and quality of the latter can be given than to remark that many of them are the work of Mrs M. C. Burkitt. The volume is not only one which none but the most parochial of prehistorians can afford to disregard; in addition it is an unpretentious record of a worthy enquiry initiated and inspired throughout, in spite of many difficulties, by that contagious enthusiasm and untiring energy which distinguishes its author. Two useful maps and an index complete the book. E. J. WAYLAND.

DIE BAUART DER EINZELGRÄBER. Beitrag zur Kenntnis der älteren individuellen Grabhügelstrukturen in den Niederlanden. *By* Dr ALBERT EGGES VAN GIFFEN, Director of the ' Biologisch-Archaeologisch Instituut ' of the University of Gröningen. *Leipzig : J. A. Barth, Salomonstrasse*, 18, 1930. Vol. I (text), *pp.* VIII, 208, *with* 3 *illustrations* ; vol. II (plates), *pp.* VII, 119 *plates, containing* 156 *detail plans and illustrations.* (=Mannus-Bibliothek, edited by Prof. Dr GUSTAF KOSSINNA, no. 44 and 45). *Cloth* RM 42, *for the series* RM 36.

This work, which sets a very high standard for excavators and for the publication of results, is of paramount importance for all students who are interested in the early connexions between the British Isles and the Continent. Already when prehistory was in its infancy it had been realized that the Netherlands must have played an important role at that crucial period when the beaker people (or peoples) made their appearance on British soil. Since then evidence has been accumulating that the comparative poverty of Dutch museums in finds which did not originate from the well-known megaliths of northern type gave no true picture of what the country was likely to yield. Much new evidence is due to the activity of Dr J. H. Holwerda, the Director of the Leiden Museum. But in recent years also the northern parts turned out to be a very prolific field of research, thanks to the indefatigable work of Dr van Giffen, who has built up valuable collections in his Institute and in the museums at Gröningen and Assen, and who has indeed

* See however, p. 224.—EDITOR.

gradually expanded his area as far south as the Veluwe, the sandy district south of the Zuyder Zee where Dutch prehistory probably has its most promising hunting-ground (as is shown by the collections in Leiden).

Dr Åberg's *Die Steinzeit in den Niederlanden* (Uppsala, 1916) became somewhat out-dated by the new activities: spadework from which the knowledge of megalithic and non-megalithic civilizations in the Netherlands benefited likewise. Dr van Giffen's most lavishly illustrated work *De Hunebedden in Nederland* (Utrecht, 1927)[1] sums up what all previous evidence and his own careful investigations could extract from the still existing (and most deplorably ruined) remains of the northern megaliths, which are ' northern ' not only as far as their distribution in the Netherlands goes but also northern in the sense that they are the western outpost of the Scandinavian and North German megalithic group.

If, therefore, it is unlikely that our knowledge of the Dutch megaliths will still be materially added to, it was the more desirable that we should get also Dr van Giffen's views about the non-megalithic groups which partly overlap with the megaliths in the same area (and to some extent even in time). It was to be expected that the mutual interrelationship would throw new light on a very dark period of a country whose archaeology is but little known abroad and whose very position made it an important stepping-stone for expansions from the continent, situated as it was on the border of powerful continental groups which tended towards the sea whilst this littoral country formed on the other hand a barrier between expansive maritime groups in the West and East.

Dr van Giffen's book, which is dedicated to Professor Kossinna (deceased recently), goes far to fulfil such expectations, although he will probably humbly deny that his ' contribution ' forms the corollary to his treatment of the ' Hunebedden '. The subject of the new book is the Dutch ' separate graves ' (as opposed to the megalithic collective burials[2]) of late neolithic, aeneolithic and—to some extent—early Bronze Age date which are to be found (on or under ground-level) in characteristic barrows and which belong to two different civilizations: the one to be derived from the ' Tiefstich '—(deeply incised) pottery of the Hunebedden-builders, the other belonging to the beaker civilization (or civilizations) proper and showing affinities to the other (western European) megalithic groups. Accordingly there is a marked difference in barrow construction: the barrows of the second class (' separate graves of the beaker culture ') are characterized by wooden structures or once existing circular trenches, which are absent in the first class (the ' separate graves of the " Tiefstichkeramik " '). There can be no doubt that these differences reflect a stage at which the two parental civilizations had not yet entered into promiscuity and the older the barrow the easier we will discern the different parentage, whilst in the subsequent periods the individual traits fade and a general exchange seems to take place. The gradual progress of this movement is probably nothing else but the faint repetition of the age-long struggle between the cultural groups emanating from southwestern and from northern or central Europe.

From the outset the two classes largely overlap in time, albeit that class 1 seems to have left more survivals in the burial customs of the advanced Bronze Age (and even the Iron Age) and the question of survival in later burials bulks largely in Dr van Giffen's treatment.

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[1] There is also an English edition of this elaborate work.

[2] Dr van Giffen uses also the term ' Massengräber ' (mass burials) which is rather misleading.

We are shown many typical representatives of both classes which again and again disclose the leading features, no matter how widely different the individual barrows may be. It requires indeed a highly skilled excavator to properly read these monumental palimpsests, the first of which was brought to our knowledge when the same author published the barrow of Harendermolen near Gröningen in 1924 (*Prähistorische Zeitschrift*, xv, 52 f.). The plates furnish ample evidence of the painstaking trouble taken in the excavations and the author occasionally defends himself against a possible criticism that he overdid it. We need not complain : in the existing literature we generally find that the funerary ritual receives less attention than dating finds, and careful observation may reveal more of the ritual itself—preserved by features of the soil—than is generally assumed. These rituals must always have been a highly ' conservative ' element of the civilization to which a given sepulchre belongs, and the recording of such will add to the limited possibilities of Palaeoethnology. Dr van Giffen's remarks about his favourite technique of excavation will, therefore, be welcome to many readers. Another result is the observation that the Neolithic barrows consist invariably of sand whilst the Bronze Age barrows are built of sods, indicating a change of vegetation, *i.e.*, of climate, which took place at the transitional period. He tries to link it up with the present views about climatic changes.

Let us see now how the two classes of barrows (and their subdivisions) behave. Both classes comprise features of the collective and of the non-collective burials of their parental civilizations. As typical of class 1 the author selects the ' Doppelhügel ' (double barrow ; but what he wants to denote could better be styled ' composite barrow '), no. 11 on the Noordsche Veld near Zijen, Province of Drente, which lies close to a megalithic monument. The basal sand-barrow contained a packing of stones (degenerated stone cist), and, separated from but contemporary with it, a secondary burial of a female, belonging to the ' tiefstichkeramische ' group. He interprets this as a faint remembrance of the megalithic collective burial custom ; the burials are split up, so to speak, into individual graves which betray the influence of the Cimbrian ' separate graves '. This basal mound stood unaltered for some considerable time during which heather vegetation conquered the country and covered the surface. In the early Bronze Age a covering or ' cap '-barrow was built of sods on top of the older barrow. We are thus shown the transition from ' individual family burials ' to the ' individual barrows ' of the Bronze Age. Of the latter several instances are treated on pp. 27–35. They are rather frequent in the northern but obviously also in the more southern parts of the Netherlands ; contain as a rule tree-trunk coffins in shaft-like grooves ; and are practically destitute of grave-furniture (secondary interments of later periods are frequent). In shape they can be round or oval, but also elongated, indicating the different types of megaliths which exercised their influence. The writer of this review had the privilege of being present when Dr van Giffen excavated, near Weerdinge (Drente), one of these oblong barrows whose megalithic traditions were unmistakable. This heritage seems to have outlived even the early Iron Age if we are to believe Dr van Giffen's statement that certain burials of La Tène Age show traces of its survival. The monuments occur in the Netherlands and in adjacent parts of Germany and consist of very low sod-barrows (with central urn-burial) which were encircled by an open trench. The barrows form rather large cemeteries and vary in shape. As a rule the trenches are circular, but they may also be oval and even of key-hole shape. Whilst the trench (not to speak of the cremation) is an element foreign to the tradition with which we were concerned hitherto, the author makes a good case for his claim that the inconsistency of shape reflects the

difference between round and oblong megaliths of the northern group. I confess I cannot follow Dr van Giffen in his further claim that the key-hole shaped trenches are influenced by the gallery-dolmens and similar western megaliths. The feature also can be explained by the desire to have a little ante-room separated from the surroundings and the connecting links are totally absent both in space and time.

Class II, the separate burials connected with beaker pottery, forms the main part of the book (pp. 37–166) and the resemblances which the author shows to exist between these barrows and British monuments give an additional interest to the mass of detailed facts. The class is by no means homogeneous, but the presence of wooden constructions in the barrows or of trenches round them allows of a clear-cut separation and further sub-division: (1) palisade-barrows, (2) beehive- and hut-burials, (3) the contested burial-chambers of wood with corbelled wooden roof, or ' Kuppelgräber '. They contained skeletons in crouched position (fairly soon replaced by cremation rite) and are richer in grave-furniture than the barrows of the first class; and they cluster in the Dutch Midlands, principally in the region south of the Zuyder Zee. Heterogeneous as they are in the beginning (' individualized ' collective burials or ' separate graves ' connected with the beaker population) they in turn develop on similar lines like class I and tend to amalgamate, leaving many traces in subsequent Bronze Age barrows.

A dozen instructive barrows of the first sub-group (' palisade barrows ') are dealt with on pp. 40–67, the typical one being the Harendermolen tumulus, referred to above, a short summary of whose disclosures is given. It is a bell-shaped ' double ' (read: composite) barrow which shows three subsequent stages of construction and interment: (a) a basal sand barrow of latest neolithic date with a crouched skeleton and grave-furniture of the bell-beaker civilization; to this stage of the barrow belonged a double ring of strong oaken palisades, the circles measuring 8 and 10.5 meters in diameter; (b) a covering sod-built mound with cremation burial of the middle Bronze Age; (c) urn burials, sunk in the composite mound and dating from the end of the Bronze Age (700 or 600 B.C.). The similarity with, and the differences from, the Zijen tumulus are very striking, the most surprising novelty being the palisading. If the general shape of the barrow resembles already the trenched bell- and disc-shaped barrows of Britain, the double circle of standing poles seems to link up our Dutch barrow (and its derivatives like the early Bronze Age barrow near Weper in Friesland, see van Giffen, p. 72) still more closely with such conspicuous monuments of the British megalithic civilization as Stonehenge and Woodhenge. (Incidentally Dr van Giffen uses the latter names in the plural form as class terms, *e.g.*, speaking of ' Woodhenges ' to denote timber circles, which is open to objections). Whilst he is certainly right in recognizing a family resemblance in these circular structures of uprights, attention must be drawn to the fact that Woodhenge is not, as Dr van Giffen thinks, a barrow and that the four smaller circles nearby, though probably once covered with barrows, had no circular palisades of the Harendermolen type. But Dr van Giffen is not to be blamed for his mistake as he based his conclusions on the article in ANTIQUITY, March 1927, whilst Mrs M. E. Cunnington's book, in which the true nature of the enclosed area is told, appeared only in 1929. It is another question whether the child's grave in the centre of Woodhenge is sufficient reason to call the monument a sepulchre; but even if it (and Stonehenge) be only ceremonial, there are plenty of lesser stone circles of sepulchral character; and the similarity to the Dutch palisade barrow (and to Rhenish monuments like the well-known tumulus of Baierseich near Darmstadt) is too striking to be accidental.

We have learned thus that the Dutch barrows which form the subject of the book are not only related to the megalithic civilization of the North but also to its western counterpart and we may expect similar analogies to be found elsewhere in the Rhenish corridor, as indeed they are.

A very instructive barrow is the tumulus with double trench and crouched skeleton, excavated near Odoorn (Drente), which belongs to van Giffen's sub-group 3 of class II (2 and 3 are the beehive-, hut- and other burials which are characterized by wooden constructions other than palisades and which are to be explained by the house-burial conception). This tumulus yielded, amongst other grave-furniture, a tanged knife-dagger of western type and two thin gold appliques of a recognized Breton type, belonging to the very period when Brittany herself was strongly influenced by the northern civilization.

As to the general classification of the finds associated with barrows of class II we can distinguish a middle group (Veluwe, &c.) characterized by typical bell-beakers or zoned beakers, large semicylindrical bracers and buttons with V-shaped perforation, and a northern group in which the bracers are flatter and made of schist, whilst the beakers as a rule show ornamentation by cord-patterns or oblique lines. This tallies to some extent with Dr Åberg's previous classification, and we cannot help being reminded of the ' dual character of the beaker invasion ' put forward in Mr J. G. D. Clark's admirable survey in ANTIQUITY (December 1931).[1] But the two English waves cannot yet be brought into line with the Dutch groups ; and we must await further progress of excavation work in the Netherlands which will undoubtedly result in a still more comprehensive picture of the different groups and successive waves of the lower Rhenish beaker civilization.

There are very interesting sections in the book dealing with the general development which resulted in the Dutch beaker period (see also plate 119). Dr van Giffen believes that the megaliths of northwestern Europe and Denmark had a common focus in what is now part of the North Sea and that in Blytt-Sernander's ' sub-boreal ' period the builders of the separate graves and the corded beaker civilization began to move from the interior down the Elbe whilst the bell-beaker people moved down the Rhine, thus completing the then already geographically existing cleavage between the two megalithic groups. In doing so they opened the way to Central Europe, for the influences from the European west and southwest, reflected, *inter alia*, in the Dutch timber circles of the Woodhenge-Harendermolen type. British tin, Irish and Breton gold, in exchange for amber, were the main stimuli for trade relations and insular influence upon the Continent. At the same time the English Channel area is said to have been subject to a new transgression, opening a new route for the West–East trade which abandoned the older routes around the British West. This phenomenon is explained as part of the great climatic change which is testified by the heather vegetation of the sods constituting the Dutch barrows of the fully developed Bronze Age.

This is rather a long review but I want English readers who may find it difficult to follow the reasoning in the general chapters to benefit more from the many detailed accounts and most instructive plates of a book which is equally important both for regional and comparative prehistory.

ADOLF MAHR.

[1] Since the above was written the same problem has been touched upon by several writers. *See* : Miss M. Mitchell in ANTIQUITY, March 1932, 90–91, and reply by Mr J. G. D. Clark, *ibid.* 91–93 ; Prof. V. G. Childe in MAN, 1932, no. 102 ; Mr W. F. Grimes in *Proc. of the Prehist. Soc. of East Anglia*, 1931, VI, 340 f.

BUSHMAN ART. *By* Hugo Obermaier *and* Herbert Kuhn. *Oxford: Humphrey Milford*, 1930. *pp.* xxii, 64, *with* 39 *plates and* 10 *text figures.* 84*s.*

Within the last few years the standard works on Bushman paintings and engravings have been supplemented by a number of publications. The most noteworthy of these are Miss Bleek's book on Stow's material, and the truly sweeping series issued under the guidance of Dr Frobenius. But until the appearance of the work under review we have had no representative material from southwest Africa. Copies of some of these paintings had been housed in the South African Museum, and were relatively accessible to visitors to Cape Town, but with publication the paintings and engravings have become infinitely more useful as a standard of comparison between prehistoric art in this field and elsewhere. The material was collected by Mr Reinhard Maack, during his stay in southwest Africa, and he was approached by Professor Obermaier, who was generously allowed the full rights of publication. The relatively high cost of the work is adequately reflected in the beautiful manner in which it is produced. Many of the illustrations are actual photographs, and all have been separately printed and attached to their pages, but a cheaper, if less sumptuous, edition would be welcomed by the South African book trade.

The most striking fact in studying the material here presented lies in the extreme peculiarity of many of the examples. As a result the comparisons drawn by the writers between the southwest African examples and the eastern Spanish art are weak. The area reviewed, save for the crude human figures, shows an advanced and specialized art and many gaps will have to be filled before we can safely link up this material with a district even so near as southern Rhodesia. As an instance, the first three coloured plates present types of cave-art unknown elsewhere. The finicking detail of the white beadwork shown on the dull red figures of the first two recalls vaguely certain drawings known from the Kei river in the Eastern Province of the Cape. More convincing is the similarity between the art of these two areas in some of the single animal figures.

The extraordinary modernity of design and execution seen in plate 10 is unparalleled in any cave-art so far known. The calm, conventional figures of equids from Gross Spitzkopje show an impressionism surpassing in grace much of our modern European work. It is amazing to think that the purely artistic side of Bushman painting has so far evoked no more than the single chapter of Roger Fry from our chief artistic authorities. West Africa has produced a phase of European art ; can we not turn for colour and life to prehistoric Africa and Spain ?

A. J. H. Goodwin.

EXCAVATIONS AT OLYNTHUS. *By* David M. Robinson. Part ii, Architecture and Sculpture. 1930. *pp.* xxii, 155 ; 307 *photographic plates*, 3 *coloured plates*, *survey*. 90*s.* Part iii, Coins. 1931. *pp.* xiv, 129 ; 28 *plates*, 2 *figs.* 45*s.* Part iv, Terra-cottas. 1931. *pp.* xii, 105 ; 63 *plates.* 45*s. Baltimore*: *The Johns Hopkins Press.*

Dr Robinson has lost no time in publishing his excavations at Olynthus, and there is here collected an immense amount of important material. The site is identified beyond reasonable doubt, and it seems probable that it was abandoned immediately or soon after Philip's destruction of the city in 348 B.C. But we must quarrel with its excavator at once, for there is no sign that he attempted to stratify levels or to discover the dates of its buildings by careful digging. This is particularly noticeable in the confused account of the Entrance Road. Part ii contains only one section-drawing,

the step into the court of a house ; and the conglomerate or ' ground ' is only mentioned where the surface soil was too shallow for substantial remains or where pits and pithoi were sunk in it. Nor were the traces of fire examined carefully, which are mentioned sporadically with individual finds ; and no record is made of burnt brick. The argument for dating goes in a vicious circle : in part II the finds give 348 B.C. as the *terminus ante quem* ; in III and IV the excavation dates the finds. But the problem is complicated by the discovery of coins, terra-cotta busts and lamps, black-stamped ware, statuettes of Leda with the swan, Silenus, and genre subjects, all of which are usually dated Hellenistic and are now claimed as Hellenic. It is enough to quote twice : ' Grose and Head date similar coins [of Hephaestia in Lemnos] about 300 B.C., but in view of the fact that we discovered nothing which can be definitely dated later than 348 B.C., I am inclined to date such coins before 348 B.C., as the coins with it are also before 348 B.C.' (IV, 93). ' The statement has been made repeatedly that realistic or comic figures belong to Hellenistic and not Hellenic times. But our excavations have shown that we must revise our chronology, and that such types were already known in the time of Philip or perhaps even earlier. The circumstances of finding and the pottery and coins found with the following terra-cottas make this certain. Furthermore most of them were buried in the ashes which came from the conflagration of August, 348 B.C.' (IV, 79). The reader must decide for himself if the head of Pan (IV, no. 386) can be dated to the early fourth century by its provenance (trench IV) and the objects found with it, or if in trench IV sherds ranging from Neolithic to black-stamped ware were found without any stratification (II, 5), or if anything in the three volumes can be dated by its Olynthian context.

But some points are clear. The South Hill was occupied in Neolithic times and again from the Iron Age onwards. Among the confused remains two houses are conspicuous in plan, built back to back, rectangular, double-roomed (II, figs. 38, 40). At the northern end of the hill, the 'Civic Centre', were a long rectangular altar and a pillared hall of uncertain plan. Several stucco fragments of anta capitals, pieces of applied bead-and-reel and egg-and-tongue (called egg-and-dart, and profile not shown) were found near by, which probably date from an earlier building whose existence is suggested by cuttings in the rock and reused blocks.

On the North Hill three areas were examined ; two of them on eastern spurs showed signs of rebuilding, but along the west side the houses were planned and built late in the history of the site. Here a street runs north and south, 5 m. wide, with regular houses of a frontage of about 17 m. Cross streets run at right angles to the east, making a block front of two houses; and the 1931 excavations have confirmed the Hippodamian plan and laid bare a complete block. (*Illustrated London News*, 23 Jan. 1932). The houses, though not uniform, may be generalized as follows : a long passage leads directly from the road to an open court, on to which the rooms look from the north. The rooms are separate from each other ; and the principal room is nearly square, having a low and broad border round a square of mosaic or cement from which a drain carries off the water. We cannot speak definitely of an impluvium, for there is no evidence for the roof, and incidentally none for the second story which is postulated, and remarkably few tiles were found. The megaron plan of a room facing south on to the entrance passage is found in houses 2 and 3 (*cf.* Priene, house XXVI) ; and in house 3 there is a peristyle, one side of it continuing a narrow entrance from the west.

Enough remains from the houses to throw an ironical light on Demosthenes' eulogy of the great Athenians' simplicity (Ol. III, 25). The pebble mosaics are

magnificent; the sculptures are few but good. Among the many terra-cottas a mould for a figure of Cybele and fragments of broken plaques of the Athena Parthenos may be mentioned. The lamps are discussed at the end of part II, and Miss Wilson has added a chapter on the loom-weights. 1187 coins are catalogued in part III. Among them are 67 bronzes of the Bottiaeans, probably contemporary with issues of the Chalcidic League; 47 are fourth century issues of Potidaea, obverse Athena in Corinthian helmet, reverse trident or bull or winged Pegasus, from which Dr Robinson deduces a rebuilding of the city by the Corinthians.

The panoramas in part II familiarize every corner of the site; but the publication is overweighted with photographs, many of them bad, especially in III and IV, and many in II unnecessary. The spear and arrowheads, one inscribed with Philip's name (II, xi and 25) and some of the loom-weight stamps might have had some illustration, *e.g.*, no. 27, a foreshortened figure, and no. 16, a kneeling archer, quoted as parallel to a terra-cotta relief (IV, 340). The cataloguing and the indexing are thorough, except for the omission in II of necessary references to trenches 7, 8, 13, 14, and to the few metal finds. One knife blade is the only tool recorded (II, 102). Part II is tedious reading owing to its clumsy arrangement of photographs, and the survey at the end would be more useful if the trenches were numbered in it. Two of the plans have no scale or compass points, and the illustrations have no scales. Yet the text is full of unnecessary measurements, and is spoilt by inaccuracies and hasty writing; 'skillful' slips in (II, 126), but 'Terone' and 'Teronaic' are intentional for Torone in IV. The publication is prompt, well-referenced and intended for the non-specialist reader; but the material is too important and interesting to need pretentious description. G. A. D. TAIT.

GREEK CITIES IN ITALY AND SICILY. *By* DAVID RANDALL-MACIVER. *Oxford*: *Humphrey Milford*, 1931. *pp.* 266, *and* 22 *plates*, 2 *maps and* 3 *plans*. 12*s* 6*d*.

Dr Randall-MacIver's name on the title page is a guarantee of the scholarly excellence of a book, and this volume on the Greek cities of Italy and Sicily fulfils a double purpose. From the archaeological point of view it supplements the classical work of Lenormant in Italy, bringing it completely up to date, while it presents much new material, partly due to the work of Professor Orsi, on the Sicilian cities. A brief history is given of every town, and in the case of Syracuse this is expanded into two excellent chapters. Writing in a style worthy of the subject, Dr Randall-MacIver has avoided pedantry, but has supplied references to larger works in footnotes, thus producing a volume of great attractiveness for the general reader who may be neither an antiquary nor a traveller.

In the second place, the author's personal knowledge of the sites, and the useful information he gives as to the best method by which they may be reached at the present day, make the book an invaluable guide to tourists or archaeologists visiting Magna Graecia. The illustrations are beautiful and well reproduced.

DINA PORTWAY DOBSON.

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CHRONOLOGICAL TABLE OF PREHISTORY

by

MILES BURKITT AND V. GORDON CHILD

Supplement to ANTIQUITY, *June*

CHRONOLOGICAL TABLE OF PREHISTORY

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EXPLANATORY NOTE

The upper half of the table is not drawn to the same time scale as is the lower half. For example, the Chellean period certainly lasted thousands of years. Furthermore, the word Mesolithic has been omitted below Upper Palaeolithic in the first column, because it is sometimes used to denote a time period, sometimes a cultural phase not necessarily contemporary everywhere. Thus the junction between the Mesolithic, Neolithic, and even occasionally the Copper Age cultures is not always horizontal in time in the table. For example, the Tasian of column 1 is already a Copper Age culture, though contemporary with the Tardenoisian of columns 14, etc., which is still Mesolithic.

	1 Egypt	2 Mesopotamia and Syrian Desert	3 Syria and Palestine	4 Anatolia	5 Aegean Islands: Crete	6 Aegean Islands: Cyclades	7 Aegean Islands: Peloponnese	8 S. Italy and Sicily	9 Islands of the West Mediterranean	10 North Africa	11 Spain and Portugal	12 S. France and N. Spain	13 Brittany	14 N. France and Flanders	15 Britain	16–17 Scandinavia and North Germany	18 Central and E. Germany Bohemia, Moravia Galicia, Lower Austria	19	20 South West Germany Switzerland Upper Austria	21	22 Upper Italy	23 Balkans	24	25 Hungary	26 Poland	27 South Russia	28 North Russia	29 Climatic Phases
Eolithic											Otta? * (near Madrid)	Puy* Courny?		Boncelles? *	Ipswich Kent plateau? *													Mindel
Lower Palaeolithic	Lower Palaeolithic		Chellean / Acheulean	Lower Palaeolithic?				Chellean (not in Sicily) / Acheulean (not in Sicily)			Chellean / Acheulean			Chellean / Clactonian / Levalloisean														Mindel-Riss / Riss / Riss-Würm
Middle Palaeolithic	Mousterian: Atérian	Mousterian (also in Kurdistan)						Mousterian (not in Sicily)		Atérian	Mousterian (open sites)	Mousterian (specially in caves)		Mousterian (in older layers of younger loess)	Mousterian (in caves, low terrace gravels, chalky boulder-clay, etc.)		Late Acheulean	Pre-Mousterian flake-industries	Mousterian in caves	Late Acheulean		A sort of Mousterian at Krapina		Mousterian	Acheulean			Würm I (last glacial maximum)
Upper Palaeolithic	Sébilian	Aurignacian (also in Kurdistan)						Aurignacian			Early Capsian / Late Capsian (Getulian)	Aurignacian (5 sub-divisions) Oldest cave-art 'Home art' / Solutrean (3 sub-divisions) Abundant in caves Some sculpture / Magdalenian (6 sub-divisions) Cave-art 'Home art'		Aurignacian / Solutrean (at the top of the younger loess; Somme valley) / Magdalenian in caves in Belgium and at the top of the younger loess, Somme valley	Solutrean in a few caves and open stations / Magdalenian Isolated tools only	Palaeolithic cultures not found North of York	Aurignacian / Solutrean (rare) / Magdalenian			Aurignacian / Solutrean very early; also later stages in caves / Magdalenian (rare tools)				Würm II (= Bühl)
Predynastic	Tasian / Badarian / Amratian / Gerzean / Semainian	al 'Ubaid (Prediluvian) / Uruk I / Jemdet Nasr	Natufian [Mesolithic]		Neolithic	Uninhabited	Neolithic	Neolithic			Latest Capsian / Tarden-oisian / Asturian [Mesolithic]	Tarden-oisian / Cave Culture	Asilian / Tarden-oisian	Asilian / Tardenoisian / Maglemosean	Pygmy derivatives of Aurignacian / Asilian / Tardenoisian / Maglemosean	Lyngby / Maglemosean	Tardenoisian	Azilio-Tardenoisian		Tarden-oisian (rare)		Tardenoisian	Chwalibogwician (= Swiderian) / Maglemosean	Campignian [Mesolithic]		Boreal Scottish submerged forests Lower forest period
Plano-convex Period	Dyn. I of Ur	Fara	Bronze Age I (Tahunian) (Egyptians at Byblos)	Troy I (Thermi I)	Early Minoan I	Early Cycladic	Early Helladic	Molfetta Stentinello			Tholos-tombs of Los Millares and Alcalá	Megalithic Culture / Bea-kers	Megalithic Culture / Fort Harrouard I Michelsberg / Long Stone Cists / Chassey Culture / Fort Harrouard II	Long Barrows / Beakers (B) Round barrows Beakers (A-C)	Windmill Hill / Separate Graves / Arctic Culture / Dwelling-place Culture	Kitchen Middens (Ertebelle) [Mesolithic] / Nøstvet / Late Bone Culture	[Central Germany, Galicia, Bohemia]	[Moravia and Lower Austria]	[South-West Germany]	[Alps]			Vinča I / Vinča II	Bükk Danubian / Lengyel-Tisza-Polgar	Tripolye A / Tripolye B / Maikop / Ochre Graves	Fatyanovo Culture	Atlantic Warm and moist in Littorina phase of the Baltic; land depressed Lower peat-bog phase in British Isles
3000	Protodynastic Menes Dynasties I and II / Old Kingdom / Pyramids																											3000
2800																												2800
2600				Thermi II	Tholos ossuaries II Mochlos												Danubian I						Vinča I	Bükk Danubian				2600
2400		'Sargon' of Agade (2525)		Troy II (Thermi III)	Tholos ossuaries III												Danubian II / Mixed Cultures		Michelsberg Culture									2400
2200	First intermediate period	Dyn. III of Ur		Cappadocian tablets				Siculan I									Corded ware Bell Beakers			Corded ware		Butmir	Vinča II	Lengyel-Tisza-Polgar				2200
2000	Middle Kingdom	Dyn. I of Babylon (Hammurabi)	Bronze Age II (Abraham)	Ancient Hittite Kingdom	Middle Minoan I	(Phylakopi I in Melos) Middle Cycladic	Middle Helladic		Copper Age								Marschwitz and proto-Aunjetitz				Lake-dwellings							2000
1800				Troy III-V	Middle Minoan II (1st palace at Knossos)	Phylakopi II	Minyan ware		Anghelu Ruju (Sardinia)															Beakers Copper Age I				1800
1700	Hyksos	Kassite period		Mursil I (Hittite)																				Tószeg I Perjámos				1700
1600	New Kingdom (18th Dynasty)		Bronze Age III Egyptian domination	Troy VI	Middle Minoan III Late Minoan I (Great palace at Knossos)	Phylakopi III Late Cycladic	Late Helladic (Shaft-graves Mycenae) Tholos tombs	Siculan II									Aunjetitz Culture					Bronze Age						1600
1580					Late Minoan II (Great palace at Knossos sacked)																								1580
1400	Tutankhamen		Ras Shamra	Later Hittite Empire																								1400
1200	Sea raids Land raids	Assyrian Empire	Iron Age (Philistines)		Late Mycenaean 'Trojan War' Sub-Mycenaean Dorian invasion Proto-Geometric			Terramare culture									Lausitz Culture					Terre-mare						1200
1000			Jewish Kingdom (Solomon)		Geometric																	Pianello etc.						1000
800				Phrygian Kingdom				Siculan III	Nuraghi and Talayots								Silesian Culture					Benacci I						800
600	Circumnavigation of Africa	Sennacherib Neo-Babylonian (Medes & Nebuchadnezzar)			Archaic			Greek Colonies			Late Hall-statt Cult	Massilia founded / -statt ures			Cordoned urns		Hallstatt C		Hallstatt C Hallstatt D		Villanova Culture	Benacci II Rome founded Arnoaldi					600
525		Persian Empire			Classical		Marathon 490 Herodotus Aristotle	Punic	Voyage of Himilco		Punic / Iberian / Celtiberian / Greek colonies	La Tène Culture	Hallstatt Cultures	Late Bronze Age invasions / Finger-tip urns	All Cannings La Tène I	Bronze Age	Hallstatt D				Etruscans	Certosa					525
400																												400
200		Hellenistic Monarchies			Hellenistic			Roman	Voyage of Pytheas						Glastonbury Aylesford	Iron Age	La Tène Culture				La Tène Roman	Jezerine						200
0	Roman	Parthians			Roman						Roman				Julius Caesar		Roman					Roman						0
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16–17	18	19	20	21	22	23	24	25	26	27	28	29	

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